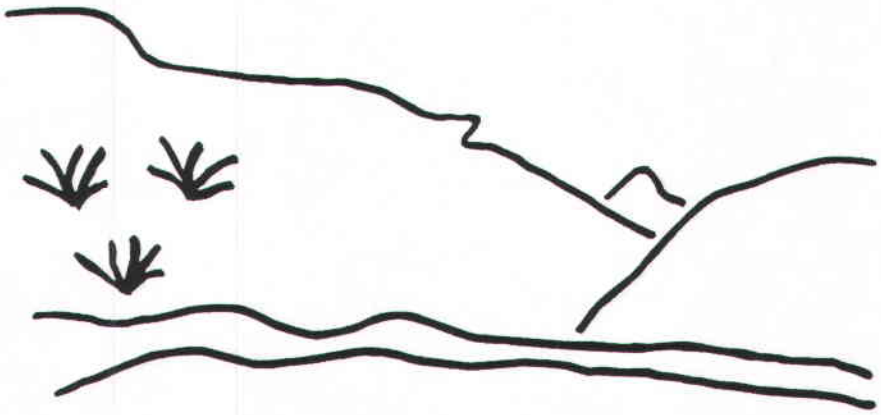
State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Deer Creek Mine
Mill Fork Lease
C/015/018-PM01I
Technical Analysis
January 31, 2002

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TECHNICAL ANALYSIS

INTRODUCTION

The Applicant acquired the Mill Fork Lease and entered a coal mining lease and agreement with the State on April 1, 1999. The Mill Fork Lease (Utah State Lease ML-48258) adds approximately 5, 563 acres to the Deer Creek Mine permit area, bringing total acreage to approximately 24, 500 acres.

The Division received an application to extend the Deer Creek Permit area into the Mill Fork Lease. This TA reviews the October 29, 2001 submittal that was determined administratively complete on December 18, 2001. This TA reviews the application for technical adequacy. The application contains deficiencies that must be addressed prior to approval.

Entry from the existing permit area will be by entries in the Hiawatha Seam, advanced from the current permit area by way of Lease Modification #3, a 65.7-acre area that has been added to Lease U-06039 for this purpose. The only potential surface facility associated with this permit extension is a possible ventilation breakout in Crandall Canyon, upstream of the existing Crandall Canyon Mine. The need for these ventilation portals will be evaluated and the design will be made based on future coal exploration. If these portals are needed, they will be permitted in a separate application. All currently planned coal mine operations in the Mill Fork Lease will be underground.

Coal will be mined in both the Blind Canyon and Hiawatha Seams, with access to the Blind Canyon, which is to be mined first, through rock slopes within the Mill Fork Lease area. Total cumulative extraction from both seams will not exceed 20 feet. The full extraction methods to be used are anticipated to cause subsidence that can be planned and controlled.

The Mill Fork Lease lies within the Huntington Canyon-Gentry Mountain and Ferron Canyon, Cottonwood-Trail Mountain multiple-use evaluation area as described in the Manti-La Sal National Forest Land and resource management plan.

INTRODUCTION

SUMMARY OF DEFICIENCIES

The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

Regulations

R645-301-112.600, The addresses of IPA, Craig Johansen, Kirk & Julie Johansen, and Etal Jensen need to be included on page 1-20. Map MFS1838D, subsurface coal ownership, shows a fee parcel under lands owned by Dick and Quinevere Nielson. The owner of the fee coal must be provided..... 8

R645-301-112.900, After this permit modification is approved but prior to reissuing the permit, the Applicant must update, correct or indicate that no change has occurred in the information previously submitted under R645-301-112.100 through R645-301-112.800..... 8

R645-301-113.300, Violation Information is dated December 2000. This appendix must be updated with a list of all violation notices received by the Applicant during the three year period preceding the application date. 9

R645-301-117.200, The draft public notice must be replaced with a copy of the actual publication showing four consecutive weeks of publication. 12

R645-301-121, All ground- and surface-water baseline data need to be included as part of the Mill Fork Lease PAP before the permit can be approved..... 13

R645-301-121, The Table of Contents in the Engineering section must provide a list of maps.. 13

R645-301-121.100, Please correct the acreage to correspond to the acreage decided in E-mail between Chuck Semborski and Pamela Grubaugh-Littig, dated January 15, 2002..... 10

R645-301-121.200, The Applicant must clarify the existence of barrier pillar along the northern border of the Hiawatha seam. On page 5-29 of the PAP the Applicant states, "That no subsidence protection barrier will be left at the north boundary in the Hiawatha, that they will

mine to the north boundary." But the map shows a ~400 foot barrier in the Hiawatha. The Applicant needs to clarify what type of barrier pillar will be left in the north boundary of the Hiawatha seam. 49

R645-301-121.200, Volume 12 of the Mill Fork Lease PAP contains laboratory reports for 42 seeps and springs from the 3rd and 4th quarter 2000, and for 50 seeps and springs from the 2nd and 3rd quarter 2001. **1)** Indian Creek Above, Indian Creek Below, Indian Creek Canal, and EM Pond that are included with these seep and spring analyses are surface-water monitoring sites. **2)** Indian Creek Ditch (ICD) is described on page 66: it isn't clear whether ICD and Indian Creek Canal are the same site. These two items need to be clarified. 37

R645-301-130, Data must be presented to support the statement in the application that experience from the existing PacifiCorp permit areas has shown that the effects of subsidence on grazing and grazing lands, timber resources or access to timber resources, wildlife resources are minimal. No data or qualified person has been attributed to these statements. Data must be provided or the name and qualifications of the person making the statement must be provided 52

R645-301-131, All technical data must be accompanied by the dates of the data collection. Provide the dates of data collection and analysis for the bat studies. 20

R645-301-132, Analyses will be under the direction of a professional qualified in threatened and endangered species. The name and qualifications of this qualified person must be provided in the MRP. 20

R645-301-150, the Mill Fork Lease PAP is not considered technically complete at this time. Deficiencies are identified in appropriate sections of this TA. 13

R645-301-322, the MRP must discuss the potential for Link Canyon columbine, heliotrope milkvetch, Maguire campion, Carrington daisy, and canyon sweetvetch occurrence in the proposed permit area. 20

R645-301-322, the MRP must discuss the potential for the presence or absence of the Mexican spotted owl. 20

R645-301-332, A monitoring system must be described in the MRP that will record any vegetation change over time from subsidence. 53

R645-301-333, A statement must be provided concerning the operational effects of underground mining on the threatened, endangered, and sensitive plant and animal species found within the permit area. 52

R645-301-333.300, The MRP must describe the protection protective measures and continued resource information gathering for golden eagles. 52

SUMMARY OF DEFICIENCIES

R645-301-512.121, The Applicant must locate all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the building. 41

R645-301-521.141, The Applicant must provide a map indicating the boundaries of all areas proposed to be affected by mining. 77

R645-301-521.142, R645-301-525.110 and R645-301.525.240, The Applicant must give the Division a map the show the areas that are scheduled to subside (area within the angle-of-draw) and those features that will be protected from subsidence. 49

R645-301-525.120, If the Applicant decides to undermine or subside any portion of the 345 KV transmission line then they must include a narrative indicating whether subsidence, if occurred, could cause material damage to the structure. 49

R645-301-525.312, If the Applicant decides to undermine or subside any portion of the 345 KV transmission line, the Applicant will need the written consent of the owner (Utah Power)..... 49

R645-301-525.520, The Applicant will need to purchase before mining a non-cancelable premium-prepaid insurance policy, but only if the Applicant plans to undermine or potentially subside any portion of the 345KV transmission line. 49

R645-301-525.700, At least six months prior to mining, the underground mining operator will mail a notification to the water conservancy district and Utah Power (only if 345 KV transmission line is to be subsided). The notification will include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined. 49

R645-301-526.110, The Applicant needs to list all existing structures in the Mill Fork Lease area in Section R645-301-526 of the PAP. See the analysis section for details..... 45

R645-301-722.100, There are no maps showing location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps. 41

R645-301-724, The Applicant needs to provide detailed information showing drill hole information, including drill logs and the geologic relationship between drill holes, including faults and groundwater sources..... 23

R645-301-724, The Applicant should submit acid- and toxic-forming information for the Hiawatha Coal Seam and provide detail of any information collected from boreholes on the lease area. Data should be sufficient to identify the potential for acid and toxic contamination. If no borehole information is available for the lease area, a waiver for collecting this

information can be requested by the operator is there if evidence that no potential for contamination or degradation of surface and ground-water resources exists. 23

R645-301-724.200, -121.100, Baseline data or data summaries for Mill Fork and Indian Creek in the Mill Fork Lease PAP do not provide adequate information on seasonal variation of quality and quantity and are incomplete and inadequate, so current information as required by the Coal Mining Rules is not available in the PAP. The Coal Mining Rules are clear that the Mill Fork Lease PAP should be complete and contain the required information, and not require a search for the information at other sources, such as annual or quarterly reports. All surface-water baseline data need to be included as part of the Mill Fork Lease PAP before the permit can be approved. 36

R654-301-724.100, -121, Data from 1980, 1981, 1982, 1991, 1992, 1993, 1994, 1995, and 1996 in the R645-301-700 Hydrology - Tables do not identify the date, the month, the quarter, or the season they were collected, who collected the data, or for what reason they were collected; they are not effective in determining seasonal variations of quality and quantity. Some of these data are briefly discussed on pages 22 and 23, but the connection between the R645-301-700 Hydrology - Tables and pre-lease hydrology evaluation for the USFS by Genwal is not clear. Clarify the source of these data and Energy West's evaluation of the quality of these data. 36

R654-301-724.100, -121, Ground-water baseline data in the Mill Fork Lease PAP are not sufficient to establish seasonal quality and quantity of ground water. The Coal Mining Rules are clear that the Mill Fork Lease PAP should be complete and contain the required information and not require a search for information at other sources. Of the sites proposed for operational monitoring, EM-216, RR-5, and MF-19B have had only field parameters measured during the baseline monitoring period, and no site has had water quality determined by lab analyses for more than 2 quarters. Data from 4th quarter 2001 need to be included in the PAP. 36

R654-301-724.100, -121, Ten springs with water rights (Mill Fork Lease PAP Table MFHT-2) are not being proposed for monitoring, and eight of the springs with water rights have no baseline data. Water rights indicate some person has an interest in the quality and quantity of the water and the potential of impacts to that spring from mining. Clarify why these springs do not have baseline and why they will not be monitored. 36

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

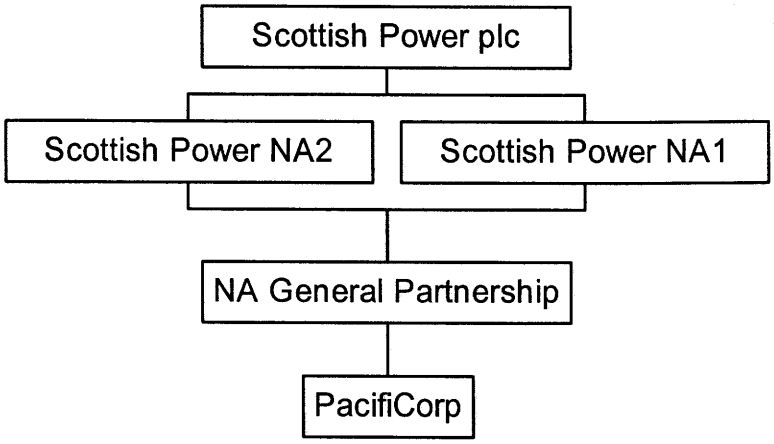
Minimum Regulatory Reference:

The operator of the coal mine and all owners and controllers of the operation must be identified by name and address. The Division with the Applicant/Violator System must crosscheck the information provided and other sources such as DOGM inspection and enforcement records, State corporation commission or tax records. If the Division identifies any errors in the ownership or control information, the applicant must be contacted to resolve the matter immediately. If the Division discovers that none of the persons identified in the application has had any previous mining experience, the applicant will be contacted to verify this fact.

The Applicant/Violator System will be updated with new information received by the Division.

Analysis:

The Applicant is PacifiCorp, an Oregon corporation. All stock of PacifiCorp is owned by NA General Partnership, a Nevada General Partnership. Scottish Power NA1Limited and Scottish Power NA2 Limited make up NA General Partnership and Scottish Power plc own both of these identities. Energy West Mining Company, a wholly owned subsidiary of PacifiCorp is the operator. Ownership and control information with names of officers and directors is in Appendix A (list is current as of December 2000). The organization is diagramed below.



The application gives the name, address and telephone number of the Applicant and operator (page 2). The resident agent is identified as Charles Semborski. Employer I.D. Number is 93-0246090 for PacifiCorp and 87-0246090 for Energy West Mining. PacifiCorp will pay the abandoned mine reclamation fee (page 1-2). The names, addresses, permit numbers, regulatory authorities, and MSHA numbers together with dates of issuance for coal mining and reclamation operations owned or controlled by the Applicant are found in section R645-301-112.400.

The table titled Deer Creek Mine – Underground Right-of-Entry Information with Cited Surface and Subsurface Ownership lists surface and subsurface owners of record together with the right of entry information of the area to be mined and is shown on maps MRS1838D and MFU1837D. The maps show adjacent property owners. R645-301-112.600 requires the name and address of each owner of record of all property contiguous to any part of the permit area. The addresses of IPA, Craig Johansen, Kirk & Julie Johansen, and Etal Jensen need to be included on page 1-20. Map MFS1838D, subsurface coal ownership, shows a fee parcel under lands owned by Dick and Quinevere Nielson but does not state the owner of the fee coal.

There are no holders of record of any leasehold interest in areas effected by surface operations of facilities or coal to be mined other than oil and gas leases and grazing permits.

After this permit modification is approved but prior to reissuing the permit, the Applicant must update, correct or indicate that no change has occurred in the information previously submitted under R645-301-112.100 through R645-301-112.800.

Findings:

Information provided in the application is not considered adequate to meet the minimum Identification of Interests section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-112.600, The addresses of IPA, Craig Johansen, Kirk & Julie Johansen, and Etal Jensen need to be included on page 1-20. Map MFS1838D, subsurface coal ownership, shows a fee parcel under lands owned by Dick and Quinevere Nielson. The owner of the fee coal must be provided.

R645-301-112.900, After this permit modification is approved but prior to reissuing the permit, the Applicant must update, correct or indicate that no change has occurred in the information previously submitted under R645-301-112.100 through R645-301-112.800.

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Minimum Regulatory Reference:

The application must inform the Division of any of the following:

(1) State or Federal permits suspension or revocation;
(2) Bond or other security forfeiture in the last five years;
(3) Any State or Federal violations received in the last three years by the applicant or any subsidiary, affiliate, or persons controlled by or under common control with the applicant. All outstanding violations (regardless of

date) must also be disclosed.

The Division will review all available information and will not issue a permit if any operation owned or controlled by the applicant or linked to the applicant is in violation of SMCRA or the State Program or any State or Federal environmental law.

The Division will notify the applicant of the violation, suspension or forfeiture hindering their current application for permit and give the applicant an opportunity to rebut the findings. The Division will keep the Applicant Violator System updated.

Analysis:

The NOV information found in Appendix B of Section R645-301-113 Violation Information is dated December 2000. This appendix must be updated with a list of all violation notices received by the Applicant during the three year period preceding the application date.

Findings:

Information provided in the application is not considered adequate to meet the minimum Violation Information section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-113.300, Violation Information is dated December 2000. This appendix must be updated with a list of all violation notices received by the Applicant during the three year period preceding the application date.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Minimum Regulatory Reference:

Documents giving legal right to enter the permit area must be detailed in the application by date, type of document, land description and rights claimed. Any pending litigation over these legal rights must be disclosed.

The written consent of the landowner for the extraction of the coal by surface mining methods must also be included when the surface and mineral owners are different. Also a copy of the conveyance that grants the legal authority to extract the coal by surface methods will be included.

The Division does not have the authority to adjudicate property rights disputes.

Analysis:

The Forest Service owns the surface lands in the Mill Fork Lease and SITLA is the sub-surface coal owner. The specific right of entry document is State Coal Lease ML 48258, Issued on April 1, 1999 to PacifiCorp (page 1-19). An Environmental Assessment for this lease was prepared by the Manti-La Sal National Forest and the Bureau of Land Management for this lease dated, June 1997 and titled, Mill Fork Federal Coal Lease Tract UTU-71307 Environmental Assessment Lease-By-Application No. 11 (EA).

The permit area addition adds 5,562.82 acres to the existing permit area of 19075.7 acres for a total of 24,638.52 acres. The table titled Deer Creek Mine – Underground Right-of-Entry Information with Cited Surface and Subsurface Ownership lists the total right-of-entry acres as 23,625.37. This acreage figure does not match the Division's. Please correct the acreage to correspond to the acreage decided in an e-mail between Chuck Semborski and Pamela Grubaugh-Littig, dated January 15, 2002.

Findings:

Information provided in the application is not considered adequate to meet the minimum Right of Entry section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-121.100, Please correct the acreage to correspond to the acreage decided in E-mail between Chuck Semborski and Pamela Grubaugh-Littig, dated January 15, 2002.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

Minimum Regulatory Reference:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

Analysis:

Maps MRS1838D and MFU1837D show the new permit area and a legal description is found in Appendix E. A statement is provided that after consultation with state and federal agencies, no lands within or adjacent to the permit area have been identified as qualifying under R645-103-300 as areas unsuitable for surface effects of underground coal mining activities (page 1-22).

Findings:

The information provided in the application meets the minimum Legal Description and Status of Unsuitability Claims requirements of the regulations.

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Minimum Regulatory Reference:

The application will describe and identify the lands (on a map) subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries. Coal mining and reclamation operations may only occur on the lands identified on the maps submitted and that are subject to the performance bond.

A public notice advertisement will contain a map or description of the precise location and boundaries of the proposed permit area. So that local residents can identify the area, the map must have a north arrow and may include local landmarks.

Analysis:

The Mill Fork Lease is an extension to the Deer Creek Mine Permit. A new permit will be issued to include this lease, but the permit will have the same term as the current Deer Creek Mine permit. The Lease is described on page 1-19; coal ownership is shown on Drawing MFU1837D and surface ownership on Drawing MFU1838D

Drawings MFU1840D and MFU1841D identify the lands subject to coal mining over the life of the operation, including the size, sequence, and timing of the mining anticipated and permit boundaries with yearly projections of mining through 2006.

See the following section for information on the public notice.

Findings:

Except as noted in the following section, Permit Renewal Information is adequate to meet the requirements of this section of the Coal Mining Rules.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Minimum Regulatory Reference

After the application has been determined "administratively complete," an advertisement must be placed in a local newspaper of general circulation in the locality of the proposed surface coal mining and reclamation operation at least once a week for four consecutive weeks. A copy of the advertisement as it will appear in the newspaper will be submitted to the regulatory authority.

At a minimum, the following will be included in the ad:

(1) The name and business address of the applicant.
(2) A map or description.
(3) The location where a copy of the application is available for public inspection.
(4) The name and address of the Division where written comments, objections, or requests for informal conferences on the application may be submitted.
(5) If an applicant seeks a permit to mine within 100 feet of the outside right-of-way of a public road or to relocate or

close a public road, except where public notice and hearing have previously been provided for this particular part of the road; a concise statement describing the public road, the particular part to relocated or closed, and the approximate timing and duration of the relocation or closing.

(6) If the application includes a request for an experimental practice, a statement indicating that an experimental practice is requested and identifying the regulatory provisions for which a variance is requested.

The Division will notify in writing local governmental agencies and all Federal or State governmental agencies involved in or with an interest in the permit process.

Documentation of the public notice and comment period required for the Permit should be incorporated as part of the Permit.

Analysis:

Appendix D contains a copy of the proposed public notice. This notice must be replaced with a copy of the actual publication. The Public Notice must contain:

1. Name and business address of applicant
2. Map or description of permit area
3. Location of where permit application is available for public review
4. Name and address of Division for comments.

Findings:

Information provided in the application is not considered adequate to meet the minimum requirements of the Public Notice and Comment section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-117.200, The draft public notice must be replaced with a copy of the actual publication showing four consecutive weeks of publication.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The Table of Contents in the Engineering section is missing a list of maps.

Some baseline hydrologic data are included in the PAP, but the remaining data are in Annual and Quarterly reports. The Coal Mining Rules are clear that the Mill Fork Lease PAP should be complete and contain the required baseline information and not require a search for that information at other sources. All ground- and surface-water baseline data need to be included as part of the Mill Fork Lease PAP before the permit can be approved.

Findings:

Information provided in the application is not considered adequate to meet the minimum requirements of the Permit Application Format and Contents section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-121, The Table of Contents in the Engineering section must provide a list of maps.

R645-301-121, All ground- and surface-water baseline data need to be included as part of the Mill Fork Lease PAP before the permit can be approved.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

Analysis:

Maps submitted with the Mill Fork Lease PAP are in the formats required by the Division.

Findings:

Information provided in the application is considered adequate to meet the minimum requirements of the Maps and Plans section of the regulations.

COMPLETENESS

Regulatory Reference: 30 CFR 777.15; R645-301-150.

Analysis:

The Mill Fork Lease PAP is not considered technically complete at this time. There is more information to be submitted by the Applicant.

Findings:

R645-301-150, the Mill Fork Lease PAP is not considered technically complete at this time. Deficiencies are identified in appropriate sections of this TA.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GENERAL

Regulatory Reference: 30 CFR 783.12; R645-301-411, -301-521, -301-721.

Minimum Regulatory Requirements:

Include a description of the existing, pre-mining environmental resources within the proposed permit area and adjacent areas that may be affected or impacted by the proposed underground mining activities.

Analysis:

The application for the proposed Mill Fork Lease area contains a description of the existing, pre-mining environmental resources within the proposed permit area and adjacent areas that may be affected or impacted by the proposed underground mining activities.

Drawing MFS1839D shows several pre-mining resources. Several springs occur over the lease. The majority of springs appear above the Castlegate Sandstone. Little Bear Spring emanates east of the lease area. Its flow was studied by HGI/Water Technology and Research. Their conclusions identified that the majority of flow from the spring is recharged from the Mill Fork Fault Graben. Mining has been conducted in both the Deer Creek Mine and Beaver Creek #4 Mine that has intercepted the graben and faults. The Applicant plans to access the Mill Fork Lease by developing mains off the Deer Creek Mine. The entries will cross the Mill Fork Fault Graben.

There has been some historic mining in the canyons east of the lease tract. No mining has occurred within the lease boundary.

There are two power lines on the lease. One line crosses a quarter section on the east side of the lease area. There is no planned mining beneath the line. The other line crosses the lease diagonally from south to west. It crosses over one panel. Two towers lie within the panel.

Wildlife and recreation are also resources that exist on the lease area.

Findings:

Environmental Resource Information in some sections of the Mill Fork Lease PAP and current Deer Creek Mine MRP is not adequate to meet the requirements of the Coal Mining Rules for approval of incorporation of the Mill Fork Lease Extension into the Deer Creek Mine MRP. Prior to approval the Applicant must provide information listed below in various sections of this TA.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.12; R645-301-411.

Minimum Regulatory Requirements:

Describe and identify the nature of cultural historic and archeological resources listed or eligible for listing on the National Register of Historic Places and known archeological sites within the proposed permit and adjacent areas. The description shall be based on all available information, including, but not limited to, information from the State Historic Preservation Officer and local archeological, historical, and cultural preservation groups.

Identify and evaluate important historic and archeological resources that may be eligible for listing on the National Register of Historic Places, through the collection of additional information, conduct of field investigations, or other appropriate analyses.

Analysis:

An historic and archeological resource evaluation was conducted in the Mill Fork area in 1995 by AERC. A stratified sample or Class II survey was the survey method used. This survey actually sampled 15 percent of the lease area. No significant resources were found. No historic and no paleontological resources occur on the lease area. The EA states that the 2 nonsignificant prehistoric sites were found in the Star Point Sandstone and not in the Castlegate Sandstone. The Star Point Sandstone is not likely to be effected by subsidence.

The EA lists several mines and access roads in areas surrounding the lease area developed in the late 1930's and 1940's. The old mines include the Tip Top, Old Leamaster, Johnson, Comfort, Rominger, and Helco Mines. A gas field to the southwestern of the lease area was developed in the 1950's. One well lies within the proposed permit area. No evaluation of the historic significance of these mines and gas field is provided in the MRP. No effects of subsidence are expected to occur on these sites.

A letter has been sent to the State Historic Preservation Officer (SHPO). No reply has been received. The findings may change pending the response in the SHPO letter.

Findings:

The information provided in the application meets the minimum Historic and Archeological Resource Information requirements of the regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Minimum Regulatory Requirements:

Provide a statement of the climatological factors that are representative of the proposed permit area, including: the

average seasonal precipitation; the average direction and velocity of prevailing winds; and, seasonal temperature ranges. Additional data may be requested as deemed necessary to ensure compliance other regulatory requirements.

Analysis:

The current Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRPs and Annual Reports provide statements of the climatological factors that are representative of the proposed permit area, including:

the average seasonal precipitation;
the average direction and velocity of prevailing winds; and
seasonal temperature ranges.

Surface water originates mainly from snowmelt, with a significant annual runoff season. Precipitation varies from year to year, with resulting variations in stream flows and spring discharges (R645-301-624).

As determined by the Division, additional data has not been deemed necessary to ensure compliance with other regulatory requirements.

Findings:

Climatalogical Resource Information in the current Deer Creek Mine MRP provides information that is adequate to meet the requirements of the Coal Mining Rules for the Mill Fork Lease.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.19; R645-301-320.

Minimum Regulatory Requirements:

Provide a map that delineates existing vegetative types and a description of the plant communities within the area affected by surface operations and facilities and within any proposed reference area. The description shall include information adequate to predict the potential for reestablishing vegetation. The map or aerial photograph is required, sufficient adjacent areas shall be included to allow evaluation of vegetation as important habitat for fish and wildlife for those species of fish and wildlife as identified under the fish and wildlife resource information.

Analysis:

The biology section of the application uses resource information taken from the Data Adequacy document and the EA.

The R645-301-300 Biology, section of the MRP describes the diversified topography, complex habitats and vegetation in terms of ecosystems and uses the classifications of conifer ecosystem, aspen ecosystems, transitional ecosystems and pinyon-juniper ecosystems and two

vegetation communities, which are: mountain brush and sagebrush grasslands. Vegetation types in the Mill Fork Lease area are described on the vegetation map (Drawing MFS1821B) as Aspen, Conifer, Conifer-Aspen, pinyon juniper-mountain brush, aspen-conifer, conifer-sagebrush-grass, and sagebrush-grass.

The MRP describes the transitional ecosystem as various vegetation types that resulted after a fire about 25 years ago. The fire covered a large portion of the Mill Fork area and likely prior to recent man's attempt to control fire this area was in a fire cycle so climax communities have never been defined in the Mill Fork area. The vegetation communities comprising the transitional ecosystems are the predominant communities in this area.

Findings:

The information provided in the application meets the minimum Vegetation Resource Information requirements of the regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.21; R645-301-322.

Minimum Regulatory Reference:

The application shall include fish and wildlife resource information for the permit area and adjacent area. The scope and level of detail for such information shall be determined by the Division in consultation with State and Federal agencies with responsibilities for fish and wildlife and shall be sufficient to design the protection and enhancement plan required under the operation and reclamation plan.

Site-specific resource information necessary to address the respective species or habitats shall be required when the permit area or adjacent area is likely to include:

(1) Listed or proposed endangered or threatened species of plants or animals or their critical habitats listed by the Secretary under the endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), or those species or habitats protected by similar State statutes;
(2) Habitats of unusually high value for fish and wildlife such as important streams, wetlands, riparian areas, cliffs supporting raptors, areas offering special shelter or protection, migration routes, or reproduction and wintering areas; or
(2) Other species or habitats identified through agency consultation as requiring special protection under State or Federal law.

Analysis:

The Mill Fork area contains portions of Crandall Creek and is a watershed for Little Bear, Mill Fork, and Right Fork of Rilda Creek. These are all tributaries to Huntington Creek. The western portion of the area is a watershed to Indian Creek. All of these named creeks contain fish and are important fisheries. The permit application states that genetic testing is currently being done to see if the Colorado cutthroat (Forest sensitive species list) population in Crandall Creek drainage is pure. This information should be available and included in the application.

A large portion of the permit area contains critical deer and elk summer range and areas that are not critical summer range are critical or high value winter range (Drawing MFS1822B and MFS1849B).

A survey for the spotted bat (Forest sensitive species list) and Townsend's big-eared bat was completed in the existing permit area and lease area (Appendix A). Results found no Townsend's big-eared bats. Spotted bats found were solitary and evenly spaced over foraging habitat (lower elevations off the lease area). Roosting sites can be found within lease area and throughout the Huntington drainage in suitable cliffs. The study concludes that, by looking at areas that have already been mined, cliff failures have not dramatically impacted resident populations. Spotted bats are "common" enough throughout the area that localized cliff failure does not pose a serious threat to the population. The dates and year of the bat study was not provided.

The coal lease is stipulated that SITLA in cooperation with the Forest Service, may impose mitigation on the lose of spotted bats. The mitigation may include avoidance during specific times and /or the prevention of bat occupancy during periods of subsidence, such as by netting or screening (Stipulation #20).

A statement is provided in the MRP that no threatened or endangered species of plants or animal inhabit the Mill Fork area (section R645-301-322.210. Threatened and Endangered Species). No basis is given for this statement. The source of this statement and name of a professional qualified in this area must be provided to support the statement.

The MRP must discuss the potential for the presence of the Mexican spotted owl. DWR in a meeting with the Division and USFWS discussed the potential for Mexican spotted owl in Utah. Potential habitat was discussed in terms of vegetation, slope, elevation and curvature as follows:

- Vegetation - mixed conifer, P-J, tends towards wooded but not always, fewer but larger trees
- Slope - 60 to 80%, minimum 40%
- Elevation - less than 8,000', if greater than 8,000' only mixed conifer (Douglas fir mix)
- Curvature - canyons, branches off of main canyons, steep walls, cooler north aspects

Potential or no potential habitat for the lease area should be discussed in the MRP for presence or absence of the four factors that determine habitat.

The EA states that habitat for three sensitive plant species may occur within the lease area. The MRP must discuss the potential presence of Carrington daisy, canyon sweetvetch, and Maguire campion. Additionally, Heliotrope milkvetch, a threatened species occurs on the same Flagstaff Limestone outcrops as the Carrington daisy and Maguire campion, but in San Pete County. San Pete County is close to the permit area and this species must be addressed in the MRP.

A query to the Utah Natural Heritage program identified the Link Canyon columbine occurring adjacent to the proposed permit area in Little Bear Canyon. This plant is a Forest sensitive species and should be addressed in the MRP.

A letter to the USFWS has been sent requesting a list of threatened and endangered species that might occur in the lease area. This list has not been received. After the list is received the potential for each species to be in the area will need to be evaluated in the MRP. Additional information will be required.

There are 3 golden eagle nests in the lease area. One coal seam will be mine under one of the nests in 2012. This nest is located in T16 S. R6 E sec. 1 SE1/4.

Findings:

Information provided in the application is not considered adequate to meet the minimum requirements of the Fish and Wildlife Resource Information section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-131, All technical data must be accompanied by the dates of the data collection. Provide the dates of data collection and analysis for the bat studies.

R645-301-132, Analyses will be under the direction of a professional qualified in threatened and endangered species. The name and qualifications of this qualified person must be provided in the MRP.

R645-301-322, the MRP must discuss the potential for the presence or absence of the Mexican spotted owl.

R645-301-322, the MRP must discuss the potential for Link Canyon columbine, heliotrope milkvetch, Maguire campion, Carrington daisy, and canyon sweetvetch occurrence in the proposed permit area.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.22; R645-301-411.

Minimum Regulatory Requirements:

Provide a statement of the condition; capability, and productivity of the land that will be affected by surface operations and facilities within the proposed permit area.

Provide a map and supporting narrative of the uses of the land existing at the time of the filing of the application. If the premining use of the land was changed within 5 years before the anticipated date of beginning the proposed operations, the historic use of the land shall also be described.

The narrative of land capability and productivity must include the capability of the land before any mining to support a variety of uses, giving consideration to soil and foundation characteristics, topography, vegetative cover, and the hydrology of the area proposed to be affected by surface operations or facilities.

Describe the productivity of the area proposed to be affected by surface operations and facilities before mining, expressed as average yield of food, fiber, forage, or wood products from such lands obtained under high levels of management. The productivity shall be determined by yield data or estimates for similar sites based on current data from the U.S. Department of Agriculture, State agricultural universities, or appropriate State natural resources or agricultural agencies.

The application must state whether the proposed permit area has been previously mined. If so, provide the following information, if available: the type of mining method used; the coal seams or other mineral strata mined; the extent of coal or other minerals removed; the approximate dates of past mining; and, the uses of the land preceding mining.

The application shall provide a description of the existing land uses and land-use classifications under local law, if any, of the proposed permit and adjacent areas.

Analysis:

The Mill Fork Lease area land use is primarily grazing, wildlife and recreation. Other uses in the area are gas production. Currently there is one producing well and plans for future gas development. A pipeline for the one gas well follows Forest Road 244 off the permit area. Utah Power and Light has a ROW for a 345 KV power transmission line and another line for the Genwall, Crandall Canyon Mine. The Flat Canyon road enters and leaves the southwest portion of the permit area.

Findings

The information provided in the application meets the minimum Land Use Resource Information requirements of the regulations.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Minimum Regulatory Requirements:

Each application shall include geologic information in sufficient detail to assist in: determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary; determining all potentially acid- or toxic-forming strata down to and including the stratum immediately below the coal seam to be mined; determining whether reclamation can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area; and, preparing the subsidence control plan.

Geologic information shall include, at a minimum, a description of the geology of the proposed permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. This description shall include the areal and structural geology of the permit and adjacent areas, and other parameters which influence the required reclamation and it shall also show how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially impacted surface and ground water. It shall be based on maps and plans required as resource information for the plan, detailed site specific information as required below, and, geologic literature and practices.

For any portion of a permit area in which the strata down to the coal seam to be mined will be removed or are already exposed, samples shall be collected and analyzed from test borings; drill cores; or fresh, unweathered, uncontaminated samples

from rock outcrops down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining. The analyses shall result in the following:

(1) Logs showing the lithologic characteristics including physical properties and thickness of each stratum and location of ground water where occurring;
(2) Chemical analyses identifying those strata that may contain acid- or toxic-forming, or alkalinity-producing materials and to determine their content, except that the Division may find that the analysis for alkalinity-producing material is unnecessary; and
(3) Chemical analysis of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyritic sulfur content is unnecessary.

For lands within the permit and adjacent areas where the strata above the coal seam to be mined will not be removed, samples shall be collected and analyzed from test borings or drill cores to provide the following data:

(1) Logs of drill holes showing the lithologic characteristics, including physical properties and thickness of each stratum that may be impacted, and location of ground water where occurring;
(2) Chemical analyses for acid- or toxic-forming or alkalinity-producing materials and their content in the strata immediately above and below the coal seam to be mined;
(3) Chemical analyses of the coal seam for acid- or toxic-forming materials, including the total sulfur and pyritic sulfur, except that the Division may find that the analysis of pyrite sulfur content is unnecessary; and
(1) For standard room-and-pillar mining operations, the thickness and engineering properties of clays or soft rock such as clay shale, if any, in the stratum immediately above and below each coal seam to be mined.

If determined to be necessary to protect the hydrologic balance, to minimize or prevent subsidence, or to meet the performance standards, the Division may require the collection, analysis, and description of additional geologic information.

An applicant may request the Division to waive in whole or in part the requirements of the borehole information or analysis required of this section. The waiver may be granted only if the Division finds in writing that the collection and analysis of such data are unnecessary because other information having equal value or effect is available to the Division in a satisfactory form.

Analysis:

The Applicant has submitted a local and regional description of the geology, including stratigraphy and structure. A list of boreholes was submitted in Appendix B. One representative lithologic log is presented in Appendix B. The Applicant submitted a generalized cross-sectional map MFU 1829D showing a cross-section of strata from north to south and east to west; no detailed information is shown, like fence diagrams identifying changes in the stratigraphic column or location of groundwater bearing zones between drill sites. The drawing shows the Mill Fork graben cutting the Blackhawk Formation on the geologic map, but in the Star Point Sandstone and Mancos Shale in the Cross-section.

The Mill Fork Lease is delineated in East Mountain and extends between Huntington Canyon to Joes Valley. It will be an extension of the Deer Creek Mine, owned by Energy West. All activities in the lease will be underground. Coal extraction will take place in the Hiawatha (lower) and Blind Canyon (upper) Coal Seams. The extracted coal will be transported through mains to the Deer Creek Mine surface facilities.

The Applicant describes monitoring for acid and toxic forming materials. Extensive monitoring has been conducted. Appendix C is referenced, however only information from the Rock Canyon Coal Seam shows analyses of roof, coal, and floor. There is no information for the Hiawatha Coal Seam and no information directly from the lease area if boreholes were drilled. There is only partial data for Pyritic Sulfur and no information on Alkalinity.

The Applicant has submitted both regional and local geologic information.

Findings:

R645-301-724, The Applicant should submit acid- and toxic-forming information for the Hiawatha Coal Seam and provide detail of any information collected from boreholes on the lease area. Data should be sufficient to identify the potential for acid and toxic contamination. If no borehole information is available for the lease area, a waiver for collecting this information can be requested by the operator is there if evidence that no potential for contamination or degradation of surface and ground-water resources exists.

R645-301-724, The Applicant needs to provide detailed information showing drill hole information, including drill logs and the geologic relationship between drill holes, including faults and groundwater sources.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 701.5, 784.14; R645-100-200, -301-724.

Minimum Regulatory Requirements:

Sampling and Analysis.

All water-quality analyses performed to meet the requirements of this section shall be conducted according to the methodology in the 15th edition of "Standard Methods for the Examination of Water and Wastewater," which is incorporated by reference, or the methodology in 40 CFR Parts 136 and 434. Water-quality sampling shall be conducted according to either methodology listed above when feasible. This incorporation by reference was approved by the Director of the Federal Register on October 26, 1983. This document is incorporated as it exists on the date of the approval, and a notice of any change in it will be published in the Federal Register.

Baseline information.

The application shall include the following baseline hydrologic information, and any additional information required by the Division.

(1) Ground-water information. The location and ownership for the permit and adjacent areas of existing wells, springs, and other ground-water resources, seasonal quality and quantity of ground water, and usage. Water-quality descriptions shall include, at a minimum, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, and total manganese. Ground-water quantity descriptions shall include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam.

(2) Surface-water information. The name, location, ownership, and description of all surface-water bodies such as streams, lakes, and impoundments, the location of any discharge into any surface-water body in the proposed permit and adjacent areas, and information on surface-water quality and quantity sufficient to demonstrate seasonal variation and water usage. Water-quality descriptions shall include, at a minimum, baseline information on total suspended solids, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, and total manganese. Baseline acidity and alkalinity information shall be provided if there is a potential for acid drainage from the proposed mining operation. Water-quantity descriptions shall include, at a minimum, baseline information on seasonal flow rates.

(3) Supplemental information. If the determination of the probable hydrologic consequences (PHC) indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, or that acid-forming or toxic-forming material is present that may result in the contamination of ground-water or surface-water supplies, then

supplemental information shall be provided to evaluate such probable hydrologic consequences and to plan remedial and reclamation activities. Such supplemental information may be based upon drilling, aquifer tests, hydrogeologic analysis of the water-bearing strata, flood flows, or analysis of other water-quality or quantity characteristics.

Baseline cumulative impact area information.

(1) Hydrologic and geologic information for the cumulative impact area necessary to assess the probable cumulative hydrologic impacts of the proposed operation and all anticipated mining on surface- and ground-water systems shall be provided if available from appropriate Federal or State agencies.
(2) If this information is not available from such agencies, then the applicant may gather and submit this information as part of the permit application.
(3) The permit shall not be approved until the necessary hydrologic and geologic information is available.

Modeling.

The use of modeling techniques, interpolation, or statistical techniques may be included as part of the permit application, but actual surface- and ground-water information may be required for each site even when such techniques are used.

Probable hydrologic consequences determination.

1.) The application shall contain a determination of the probable hydrologic consequences (PHC) of the proposed operation based upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas.
2.) The PHC determination shall be based on baseline hydrologic, geologic, and other information collected for the permit application and may include data statistically representative of the site.
3.) The PHC determination shall include findings on: whether adverse impacts may occur to the hydrologic balance; whether acid-forming or toxic-forming materials are present that could result in the contamination of surface or ground water supplies; and, what impact the proposed operation will have on sediment yield from the disturbed area; acidity, total suspended and dissolved solids, and other important water quality parameters of local impact; flooding or streamflow alteration; ground water and surface water availability; and other characteristics as required.
4.) An application for a permit revision shall be reviewed by the Division to determine whether a new or updated PHC shall be required.

Ground-water monitoring plan.

1.) The application shall include a ground-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance. It shall identify the quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At a minimum, total dissolved solids or specific conductance corrected to 25 C, pH, total iron, total manganese, and water levels shall be monitored and data submitted to the Division at least every 3 months for each monitoring location. The Division may require additional monitoring.
2.) If an applicant can demonstrate by the use of the PHC determination and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the cumulative impact area, then monitoring of that stratum may be waived by the Division.

Surface-water monitoring plan.

1.) The application shall include a surface-water monitoring plan based upon the PHC determination and the analysis of all baseline hydrologic, geologic, and other information in the permit application. The plan shall provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance, as well as the effluent limitations found at 40 CFR Part 434.
2.) The plan shall identify the surface-water quantity and quality parameters to be monitored, sampling frequency, and site locations. It shall describe how the data may be used to determine the impacts of the operation upon the hydrologic balance. At all monitoring locations in streams, lakes, and impoundments that are potentially impacted or into which water will be discharged and at upstream monitoring locations, the total dissolved solids or specific conductance corrected to 25 C, total suspended solids, pH, total iron, total manganese, and flow shall be monitored. For point-source discharges, monitoring shall be conducted in accordance with 40 CFR Parts 122, 123, and 434 and as required by the National Pollutant Discharge Elimination System permitting authority.

3.) The monitoring reports shall be submitted to the Division every 3 months. The Division may require additional monitoring.

Analysis:

Appendix A of the Mill Fork Lease Extension to the Deer Creek Mine PAP is an update of the monitoring plan in Volume 9 of the Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg PAP. Appendix B is a report by Mayo and Associates, "Surface-water and ground-water investigation of the Mill Fork Lease area, Emery County, Utah ", for the Mill Fork Lease, which includes a PHC determination.

Appendix C to the Mill Fork Lease Extension to the Deer Creek Mine PAP has been submitted with information on springs and seeps in the Mill Fork Lease. There is an interesting section with photos and descriptions of the sites; details on location and elevation, geology and stratigraphic position, and water rights and development information; relationships to other springs; and a determination of the probable recharge area. This appendix also contains data report sheets for select seeps and springs – including isotope data for select springs, and water rights in the Mill Fork Lease area. Not all baseline information for the Mill Fork Lease is in the PAP.

Jointing, which affects hydrologic characteristics, is significant in the rocks of the Mill Fork Lease area. The dominant joints in the area parallel the Joes valley fault, trending predominantly north-south to north 10^0 east, and a few secondary fracture sets follow other orientations (R845-301-624). Geology is described in R645-301-600-Geology of the Mill Fork Lease PAP, and because geology relates to ground and surface water, it is further discussed in R645-310-700-Hydrology.

Sampling and Analysis

Water-quality sampling and analyses of samples will be done according to the "Standard Methods for the Examination of Water and Wastewater". Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP Volume 9, Appendix A has sample documentation and analytical methods and detection limits (R645-301-723, p. 7-69).

Baseline Information

Ground-water information is found in R645-301-721, subsection A, and surface-water information is in R645-301-721, subsection B.

Ground-Water Information

The Coal Mining Rules are clear that the PAP should be complete and contain the required information; otherwise, persons reading the PAP are forced to search out information at other sources to understand the Mill Fork Lease PAP.

The Mill Fork Lease PAP does not contain depths to the water in the coal seams, and each water-bearing stratum above and potentially impacted stratum below the coal seams. Although some consider the Blackhawk and Star Point strata to be a regional aquifer, water intercepted in the mine workings is usually encountered in perched aquifers, tabular or stream channel sandstones that have moderate porosity but low permeability and poor interconnectivity. Water is also encountered in open joint-systems in these rocks, and in some instances in fault zones (Roan Canyon fault zone) and synclines (Straight Canyon syncline) (R645-301-624, p. 6-18).

The locations of known seeps and springs within the Mill Fork Lease area are shown on the Pre-Subsidence Survey Map (MFS1839D). Ground-water rights and users are described in some detail at R645-301-721, subsection A-15 – Groundwater Rights and Users (pp. 7-47 - 7-50). No wells are mentioned, and the Division has no knowledge of water wells or other ground-water resources in this area.

Laboratory reports for 42 seeps and springs from the 3rd and 4th quarter 2000, and for 50 seeps and springs from the 2nd and 3rd quarter 2001 in the Mill Fork Lease are in Volume 12 of the Mill Fork Lease PAP; **however, 4 samples from 2000 and 1 from 2001 are surface-water samples: this needs to be clarified**. Reports covering field parameters go back to 1982 for a few springs. Water-rights and a summary of historic water-quality data for the area are also in Volume 12.

Energy West collects operational water-monitoring data at high flow (May or June) and low flow (August, September, or October). Baseline data collection has followed the same schedule. Baseline data in the PAP for the 17 springs that are to be added to the operational monitoring are summarized in Table 1 below: EM-216, RR-5, and MF-19B have had only field parameters measured during this baseline period, and no proposed water-monitoring site has had water quality determined by lab analyses for more than 2 quarters. Six of these 17 springs have water rights. Data from seeps and springs that are not being proposed for operational monitoring are comparable. **Ground-water baseline data are not sufficient to establish seasonal quality and quantity of ground water. Data from 4th quarter 2001 need to be included in the PAP.**

Ten springs with water rights (Mill Fork Lease PAP Table MFHT-2) are not being proposed for monitoring, and eight of the springs with water rights have no baseline data (Table 2 below). Water rights indicate some person has an interest in the quality and quantity of the water and the potential of impacts to that spring from mining. **Clarify why these springs do not have baseline and why they will not be monitored.**

Data from 1980, 1981, 1982, 1991, 1992, 1993, 1994, 1995, and 1996 in the R645-301-700 Hydrology - Tables do not identify the date, the month, the quarter, or the season they were collected, who collected the data, or for what reason they were collected; they are not effective in determining seasonal variations of quality and quantity. Some of these data are briefly discussed

on pages 22 and 23, but the connection between the R645-301-700 Hydrology - Tables and pre-lease hydrology evaluation for the USFS by Genwal is not clear. **Clarify the source of these data and Energy West's evaluation of the quality of these data.**

Table 1 – Baseline for Operational Monitoring Springs									
Spring *Water Right*	1982	1993	1994	1995	1996	2000 3rd quarter	2000 4th quarter	2001 2nd quarter	2001 3rd quarter
EM-216 *93-3399*			field			field			
JV-9						field, lab		field, lab	
JV-34							field, lab	field, lab	
MF-7		field	field		field	field, lab		field, lab	
MF-10 *93-1412*		field	field	field	field		field, lab		field, lab
MF-19B *93-1413*			field	field	field	field			
MF-213 *93-259*	field					field, lab		field, lab	
MF-219 *93-1410*						field		field, lab	
MFR-10								field, lab	
MFR-30								field, lab	
RR-5			field		field	field			
RR-15			field	field	field		field, lab		field, lab
RR-23A				field	field		field, lab		field, lab
SP1-26							field, lab		field, lab
SP1-29									field, lab
UJV-101		field		field	field		field, lab		
UJV-206 *93-3400*					field	field, lab		field, lab	

Table 2 – Baseline Monitoring of Springs with Water Rights (based on Mill Fork Lease PAP Table MFHT-2)									
Spring (M=monitored) *Water Right*	1982	1993	1994	1995	1996	2000 3rd quarter	2000 4th quarter	2001 2nd quarter	2001 3rd quarter
EM-215 *93-1254*			field						
EM-216 (M) *93-3399*			field			field			
JV-26 *93-998*									
JV-36 *a23164*									
JV-43 *93-1572*									
MF-10 (M) *93-1412*		field	field	field	field		field, lab		field, lab
MF-19B (M) *93-1413*			field	field	field	field			
MF-213 (M) *93-259*	Field					field, lab		field, lab	
MF-219 (M) *93-1410*						field		field, lab	
RR-14A *93-1414*			field	field	field				
UJV-204 *93-810*		field	field	field	field				
UJV-206 (M) *93-3400*			field	field	field	field, lab		field, lab	
UJV-207 *93-821*		field	field	field	field	field, lab		field, lab	
UJV-209A *93-102*			field	field	field	field, lab		field, lab	
UJV-213 *a21560*									
UJV-214 *93-811*									

Water-quality descriptions include the parameters required by the Coal Mining Rules: total dissolved solids (TDS) and specific conductance corrected to 25° C, pH, total iron, and total manganese. In addition, baseline and operational parameters from DOGM directive Tech 005 have been determined for the samples submitted for laboratory analysis (Tables 1 and 2 of Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP Volume 9).

Monitoring parameters include approximate rates of discharge from the seeps and springs. Usage is given in the water-rights print-outs in Volume 12 of the Mill Fork Lease PAP, and locations of the water rights are shown on Drawing MFS1832D- Water Rights in Volume 12.

The Applicant states that extensive research has established that the surface- and ground-water systems are not hydraulically connected, so no impacts to surface waters is expected (R645-301-624, p. 6-18). Much of the information from this research is summarized in Appendix B of the Mill Fork Lease PAP, "Surface-water and ground-water investigation of the Mill Fork Lease area, Emery County, Utah", by Mayo and Associates.

Surface-Water Information

Crandall Canyon, Rilda Canyon, Mill Fork, and Indian Creek are the main surface drainages in the Mill Fork Lease area. A number of unnamed tributaries to Indian Creek flow from the west side of East Mountain. Only Crandall is perennial. Crandall, Rilda, and Mill Fork are tributary to Huntington Creek, Indian Creek is tributary to Cottonwood Creek. Little Bear Canyon was excluded from the Mill Fork Lease to protect Little Bear Spring.

Crandall Creek has been monitored for a number of years by Genwall Resources. The Applicant will not monitor this stream unless Genwall terminates monitoring (p. 6-62).

Rilda Canyon has been monitored downstream of the Mill Fork Lease since 1989. Baseline quality analysis monitoring was done in 1989-1990, and is to be repeated every five years.

Data for Mill Fork have been submitted with Energy West's **quarterly reports** since 1997. Flows have been monitored monthly since January 1997, but most reports show no flow. Water-quality reports for the three samples collected in 1997 and 1998 include information on total suspended solids, total dissolved solids or specific conductance corrected to 25° C, pH, total iron, and total manganese. Operational parameters from DOGM directive Tech 005 have been determined for the samples submitted for laboratory analysis during 1997 and 1998. According to the Mill Fork Lease PAP, baseline quality analysis was done from 4th quarter 1998 through 4th quarter 2000 (p. 7-63: it states on page 8 of the 2000 Annual Report that because there was no-flow in 2000, baseline monitoring was to be continued through 2001). Baseline analyses will be repeated every five years (p. 7-63). The 2000 **Annual Report** summarizes baseline data for

1999 and 2000, but this summary gives no information on seasonal variation of quality and quantity. **Most information referred to above was from sources other than the Mill Fork Lease PAP. Baseline data or data summaries for Mill Fork in the Mill Fork Lease PAP do not provide information on seasonal variation of quality and quantity and are incomplete and inadequate, so current baseline information as required by the Coal Mining Rules is not available in the PAP.**

Indian Creek was monitored for baseline parameters in 2000 and 2001. It states on page 7-67 that information from baseline sampling is included in Appendix C of the Mill Fork Lease PAP. There are data for October 2001 in the Mill Fork Lease PAP: data for the other seven quarters have not been included in the PAP. (There is no summary of Indian Creek data in the 2000 Annual Report.) **Baseline data or data summaries for Indian Creek in the Mill Fork Lease PAP do not provide information on seasonal variation of quality and quantity and are incomplete and inadequate, so current baseline information as required by the Coal Mining Rules is not available in the PAP.**

There are no known water-supply intakes for current users of surface waters flowing into, out of, and within the Mill Fork Lease hydrologic area. The water supply system in Rilda canyon is shown on maps and drawings in the existing Deer Creek Mine MRP. No surface waters will receive discharges from affected areas in the proposed Mill Fork Lease area. Locations for Deer Creek Mine UPDES discharge points are shown on maps in the existing MRP.

Names and locations of surface water bodies within the proposed Mill Fork Lease permit and adjacent areas are shown on several maps, including Plate 1; Drawing MFS1830D – Hydrologic Map; and Drawing MFS1839D - Pre-subsidence Survey Map. Water rights are listed in water-rights print-outs in Volume 12 of the Mill Fork Lease PAP, and locations are shown on Drawing MFS1832D - Water Rights in Volume 12. Surface-water bodies are described in R645-301-721, subsection B (pp. 7-54 – 7-71. No surface waters will receive discharges from affected areas in the proposed Mill Fork Lease area. Locations for Deer Creek Mine UPDES discharge points are shown on maps in the existing Deer Creek Mine MRP.

With the exception of Indian Creek Above (ICA), Indian Creek Below (ICB), Indian Creek Canal, and EM Pond, which are included with the seep and spring data, there does not appear to be any surface-water quality and quantity data in the Mill Fork Lease PAP. The Applicant states that baseline data have been collected since 1997 at MFA01 and MFB02 in Mill Fork, and during 2000 and 2001 at ICA, ICB, Indian Creek Flume (ICF – installed by Genwall Resources), and Indian Creek Ditch (ICD – same as Indian Creek Canal?). Data are in the Annual Reports. Locations are shown on Drawing MFS1851D – Hydrologic Monitoring Map.

Information on the ICA, ICB, ICD, and EM Pond in the Mill Fork Lease PAP is not sufficient to demonstrate seasonal variation and water usage. Water-quality descriptions include baseline information on total suspended solids, total dissolved solids or specific

conductance corrected to 25° C, pH, total iron, and total manganese. In addition, baseline and operational parameters from DOGM directive Tech 005 have been determined for the samples submitted for laboratory analysis (and are included in Tables 1 and 2 of Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP Volume 9).

There will be no new mine openings under the Mill Fork Lease PAP and no potential for acid drainage from the proposed mining operation in the Mill Fork Lease area. Nevertheless, the Applicant has included information on baseline acidity and alkalinity in the ground-water quality analyses.

Flow down many canyons is through the alluvium rather than at the surface, although water may surface for a short reach and then percolate into the alluvium again as it continues its flow down the canyon (p. 6-18).

Baseline Cumulative Impact Area Information

No information has been submitted with the Mill Fork Lease PAP specifically for the Division to use in updating or modifying the East Mountain CHIA. Information on numerous springs that have not been monitored previously is included. The information will be useful in determining impacts within the CIA, but probable impacts to these springs will not cause material damage to the hydrologic balance outside the CIA.

The Mill Fork Lease is in the cumulative impact area (CIA) for the East Mountain CHIA prepared by the Division in 1994. Mining will be done beneath the Mill Fork, Rilda Canyon, and Indian Creek watersheds. The Mill Fork Lease area is between Joes Valley fault and the Mill Fork graben. The Joes Valley fault is especially important as it is a hydrologic barrier between the mine and Indian Creek in Joes Valley in the subsurface; shallow ground-water flows through alluvium in the bottoms of the canyons that descend from East Mountain to Joes Valley and then flows into Joes Valley through the alluvial fans that cross the fault (R645-301-624, p. 6-18).

Although the areas of impact will shift within the CIA, there should be no change to cumulative impacts outside the CIA. The main hydrologic impact will be removal of water from storage in the Blackhawk Formation and Star Point Sandstone, which will have no impact on the hydrologic balance outside the CIA. The quantity of discharges from the mine to surface waters should continue at rates similar to those from other recent mine operations, and water quality of the discharges should also be similar, so surface water will not be further impacted or materially damaged.

Modeling

Modeling techniques have not been included as part of the Mill Fork Lease PAP.

Alternative Water Source Information

The Applicant commits to the replacement of water lost or adversely affected, prior to final bond release, as a result of mining operations in the Mill Fork Lease area. Water will be replaced from an alternate source in sufficient quantity to maintain the current and post-mining land uses (R645-301-731.800, p. 7-100). The source and suitability of the alternative water are not identified or discussed; however, the probable hydrologic consequences determination required by R645-301-728 does not indicate that mining in the proposed Mill Fork Lease may proximately result in contamination, diminution, or interruption of an underground or surface source of water within the proposed permit or adjacent areas which is used for domestic, agricultural, industrial or other legitimate purpose. Therefore, the application is not required to contain specific information on water availability and alternative water sources.

Probable Hydrologic Consequences Determination

The planned subsidence from full-extraction mining should result in a generally uniform lowering of the surface over broad areas, and that will limit the extent of material damage to the surface lands, with no appreciable change to land uses and renewable resources, including seeps, springs, and streams. Experience in the Deer Creek Mine area shows that subsidence occurs within two months of coal extraction, and the land is stable after two years. Predicted subsidence is 0 -15 feet, based on total cumulative extraction not exceeding 20 feet.

Full-extraction mining will be done beneath the headwaters of Rilda, Mill Fork, and Crandall Canyons. There will be no full-extraction mining beneath and no subsidence of the stream channels in those canyons. The PAP discusses the PHC on pages 78 – 96 and in Appendix B of R645-301-700.

The permit application is to contain a determination of the PHC of the proposed coal mining and reclamation operation upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas. Complete and adequate seasonal baseline data, upon which the PHC is to be based, are not in the PAP. Nevertheless, the determination of the PHC on pages 123 – 130 of Appendix B includes findings - based upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas - on:

1. *Whether adverse impacts may occur to the hydrologic balance;*
    a. Mining in the current Energy West permit areas has not affected surface- and ground-water flows.
        i. Most springs identified in the Deer Creek Mine and Mill Fork Lease areas occur in the Price River, North Horn, and Flagstaff formations;
            1. The layout of the past and future mines is designed to minimize subsidence impacts to the steep cliffs of the

Castlegate Sandstone.

2. Nearly all observed subsidence has occurred in the Price River, North Horn, and Flagstaff formations that overlie the Castlegate.
3. Springs in the Price River, North Horn, and Flagstaff formations are isolated from subsidence related *fracturing* because of :
    a. the thickness of overburden; and
    b. clayey units that deform plastically and swell when wetted.
4. Numerous springs have been undermined on East and Trail Mountains, and those that are on areas that have subsided show no evidence of discharge declines attributable to subsidence or fracturing.

ii. Ephemeral and intermittent reaches or Deer Creek and Grimes Wash have been subsided, with no discharge declines attributable to mining-induced subsidence.

iii. Waters encountered underground by mining are from strata immediately above and below the mined horizon and from faults.

1. Water in strata above the coal are from isolated, inactive systems that are not in connection with the near-surface spring waters.
2. Inflows into the Deer Creek and Crandall Canyon Mines have occurred from faults.
    a. In general, these waters do not appear to be tied to modern, active ground-water systems; however
    b. Tritium data indicate that some ground-water inflows from these faults are local and in hydraulic communication with modern near-surface water.
3. In the Straight Canyon Syncline, substantial volumes of ground water have flowed into the Deer Creek Mine from the underlying Star Point Sandstone.

b. By analogy with currently mined areas:

i. Reduction of surface-water flows in Mill Fork, Crandall, and Rilda Canyons is not anticipated.

ii. The potential for adverse affects to headwater reaches of Mill Fork that overlie planned full-extraction mining areas is minimal because these channel reaches are separated from the coal by the thick sequence of low-permeability North Horn and Price River Formations.

iii. The Mill Fork Lease area has no structure analogous to the Straight Canyon Syncline, so inflows to the mine from the underlying Star Point Sandstone are not anticipated.

iv. Mining within 200 to 300 feet of the Joes Valley fault system could intercept appreciable quantities of modern near-surface water.

c. The potential for adverse impacts to Little Bear Spring is small because:
   i. It is 1.5 miles from the lease boundary and 2 miles from the nearest proposed mining; and
   ii. It discharges from an active ground-water system that is in good communication with shallow recharge sources.

2. *Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface- or ground-water supplies;*
   a. Pyrite has been identified in the PacifCorp mines.
      i. The pyrite oxidizes to produce acid.
      ii. Acidic waters and iron have not been observed in the PacifiCorp mines.
         1. Acid produced by pyrite oxidation is quickly neutralized by naturally occurring carbonate minerals.
         2. Iron is precipitated as iron hydroxide.
   b. No other acid-forming material than pyrite and no toxic-forming materials have been found or are suspected to exist in strata to be disturbed by mining.
   c. Extensive testing of overburden strata, coal, and surrounding rocks has shown that there are no potentially acid- and toxic-forming materials (R645-301-623.100). Details of yearly analyses (1993 to 1999) of coal, floor, and roof are in R645-301-600-Geology - Appendix C of the Mill Fork Lease PAP. Analyses of overburden material are presented in Table G-1 in Volume 8 of the Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP, and summarized in Appendix A of the Mill Fork Lease PAP.

3. *What impact the proposed coal mining and reclamation operation will have on:*
   a. *sediment yield from the disturbed area;*
      i. Sediment yield from disturbed surface areas is minimized by sediment control structures;
      ii. Sediment in mine discharge water is minimized by sedimentation ponds;
      iii. Subsidence can increase or decrease sediment load in streams;
         1. Increased stream gradient;
            a. Higher flow velocities;
            b. Greater sediment entrainment.
            c. Extent this will occur in the Mill Fork Lease area is not known, but this is typically local and short-lived.
         2. Decreased stream gradient, stream impoundment;
            a. Sediment deposited in the impoundment;
            b. Extent this will occur in the Mill Fork Lease area is

not known, but this is typically local and short-lived.

b. *acidity, total suspended and dissolved solids and other important water quality parameters of local impact;*
   i. Most springs occur in strata above the coal seam and mine, so a mechanism for impact is unlikely.
   ii. Past monitoring at the Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg Mines has detected no impacts to quality of water in springs and streams.
   iii. Water discharged from the Mill Fork Lease will be subject to UPDES standards.
   iv. Water discharged should be similar to that discharged from the Deer Creek and Cottonwood-Wilberg Mines, which:
      1. Meets secondary drinking water quality standards, and
      2. Has not had identifiable detrimental impacts on the quality of water in the receiving streams

c. *flooding or streamflow alteration;*
   i. Expected discharge, although impossible to predict, will probably be much less than the maximum runoff during spring snowmelt or summer thundershowers;
   ii. Flooding and streamflow alteration are not expected from mine discharge waters.

d. *ground-water and surface-water availability;*
   i. Mining will not significantly affect availability of ground water
      1. Ground water in the Blackhawk is compartmentalized and the formation is not a hydraulically continuous aquifer
      2. Ground water in the Blackhawk is isolated from overlying, modern ground waters;
      3. Local effects of dewatering will have no effects on the ground-water availability in the surrounding region.
   ii. No water supplies will be impacted by removal of water from strata immediately above and below the coal seams.

e. *other characteristics as required by the Division;* The Division has required the evaluation of no other characteristics.

4. *Whether the UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES conducted after October 24, 1992 may result in contamination, diminution or interruption of State-appropriated Water in existence within the proposed permit or adjacent areas at the time the application is submitte*d.
   a. There are no ground-water supply wells in the Mill Fork Lease area.
   b. No water supplies will be impacted by removal of water from strata immediately above and below the coal seams.

Findings:

Hydrologic Resource Information is not considered adequate to meet the requirements of this section. Prior to approval the Applicant must provide the following information for the Mill Fork Lease PAP in accordance with:

R654-301-724.100, -121, Ground-water baseline data in the Mill Fork Lease PAP are not sufficient to establish seasonal quality and quantity of ground water. The Coal Mining Rules are clear that the Mill Fork Lease PAP should be complete and contain the required information and not require a search for information at other sources. Of the sites proposed for operational monitoring, EM-216, RR-5, and MF-19B have had only field parameters measured during the baseline monitoring period, and no site has had water quality determined by lab analyses for more than 2 quarters. Data from 4th quarter 2001 need to be included in the PAP.

R654-301-724.100, -121, Ten springs with water rights (Mill Fork Lease PAP Table MFHT-2) are not being proposed for monitoring, and eight of the springs with water rights have no baseline data. Water rights indicate some person has an interest in the quality and quantity of the water and the potential of impacts to that spring from mining. Clarify why these springs do not have baseline and why they will not be monitored.

R654-301-724.100, -121, Data from 1980, 1981, 1982, 1991, 1992, 1993, 1994, 1995, and 1996 in the R645-301-700 Hydrology - Tables do not identify the date, the month, the quarter, or the season they were collected, who collected the data, or for what reason they were collected; they are not effective in determining seasonal variations of quality and quantity. Some of these data are briefly discussed on pages 22 and 23, but the connection between the R645-301-700 Hydrology - Tables and pre-lease hydrology evaluation for the USFS by Genwal is not clear. Clarify the source of these data and Energy West's evaluation of the quality of these data.

R645-301-724.200, -121.100, Baseline data or data summaries for Mill Fork and Indian Creek in the Mill Fork Lease PAP do not provide adequate information on seasonal variation of quality and quantity and are incomplete and inadequate, so current information as required by the Coal Mining Rules is not available in the PAP. The Coal Mining Rules are clear that the Mill Fork Lease PAP should be complete and contain the required information, and not require a search for the information at other sources, such as annual or quarterly reports. All surface-water baseline data need to be included as part of the Mill Fork Lease PAP before the permit can be approved.

R645-301-121.200, Volume 12 of the Mill Fork Lease PAP contains laboratory reports for 42 seeps and springs from the 3rd and 4th quarter 2000, and for 50 seeps and springs from the 2nd and 3rd quarter 2001. **1)** Indian Creek Above, Indian Creek Below, Indian Creek Canal, and EM Pond that are included with these seep and spring analyses are surface-water monitoring sites. **2)** Indian Creek Ditch (ICD) is described on page 66: it isn't clear whether ICD and Indian Creek Canal are the same site. These two items need to be clarified.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Minimum Regulatory Requirements:

The permit application must include as part of the Resource Information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of the underground mining activities, with a description of size, sequence, and timing of the mining of subareas for which it is anticipated that additional permits will be sought.

Archeological site maps

Known archeological sites within the permit or adjacent areas. Note - Information on the nature and location of archeological resources on public land and Indian land as required under the Archeological Resources Protection Act of 1979 must be submitted separately from the application, and marked and held as confidential.

Coal resource and geologic information maps

Nature, depth, and thickness of the coal seams to be mined, any coal or rider seams above the seam to be mined, each stratum of the overburden, and the stratum immediately below the lowest coal seam to be mined. All coal crop lines and the strike and dip of the coal to be mined within the proposed permit area.

Cultural resource maps

The boundaries of any public park and locations of any cultural and historical resources listed or eligible for listing in the National Register of Historic Places. Each cemetery that is located in or within 100 feet of the proposed permit area. Any land within the proposed permit area which is within the boundaries of any units of the National System of Trails or the Wild and Scenic Rivers System, including study rivers designated under Section 5(a) of the Wild and Scenic Rivers Act. Any other relevant information required by the Division.

Existing structures and facilities maps

Location and dimensions of existing areas of spoil, waste, coal development waste, and noncoal waste disposal, dams, embankments, other impoundments, and water treatment and air pollution control facilities within the proposed permit area.

Existing surface configuration maps

Sufficient slope measurements to adequately represent the existing land surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area to be disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the premining configuration of the land; and, slope measurements shall take into account natural variations in slope, to provide accurate representation of the range of natural slopes and reflect geomorphic differences of the area to be disturbed.

Mine workings maps

Location and extent of know workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, fish and wildlife, and air quality, if required, in preparation of the application

Permit area boundary maps

The boundaries of land within the proposed permit area upon which the applicant has the legal right to enter and begin underground mining activities.

Subsurface water resource maps

Location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

Surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area.

Surface and subsurface ownership maps

All boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area.

Surface water resource maps

The locations of water-supply intakes for current users of surface waters flowing into, out of, and within a hydrologic area defined by the Division, and those surface waters which will receive discharges from affected areas in the proposed permit area. Location of surface water bodies such as streams, lakes, ponds, springs, constructed or natural drains, and irrigation ditches within the proposed permit and adjacent areas.

Vegetation reference area maps

The location and boundaries of any proposed reference areas for determining the success of revegetation.

Well maps

Location, and depth if available, of gas and oil wells within the proposed permit area and water wells in the permit area and adjacent areas.

Cross sections, maps, and plans included in a permit application as required by this section shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional, land surveyor, with assistance from experts in related fields such as landscape architecture, and shall be updated periodically as required by the Division.

Analysis:

Applicable cross sections and maps included in or referenced in the Mill Fork Lease PAP have been prepared by, or under the direction of, and certified by a qualified, registered,

professional engineer or land surveyor, with assistance from experts in related fields such as hydrology, geology, and biology (R645-301-513, p. 5-2).

Affected Area Boundary Maps

The affected area is usually considered by the Division to be the same as the permit boundaries. The Applicant submitted several maps that show the permit boundaries for the Mill Fork Lease. This issue has been address below in the section called Maps, Plans and Cross Sections of Mining Operations.

Existing Structures and Facilities Maps

The Mill Fork Lease will not have any surface facilities at the present time. All mining activities will be conducted underground. However, the Applicant did make a statement that they are evaluating the possibility of new portals located at Crandall Canyon. This would require a separate permitting action and will not be approved under the C/015/018-PM01I (Mill Fork Lease).

Existing Surface Configuration Maps

Several maps show the existing surface configuration of the Mill Fork Lease area, such as Drawing MFS1839D, Deer Creek Mine Mill Fork Lease ML-48258 Pre-Subsidence Survey Map. The map is at a scale of 1" = 1,000 'and has 100 foot contours.

Mine Workings Maps

The Applicant has submitted maps showing the underground mine working associated within the Mill Fork Lease. The maps show active, inactive and abandoned underground mine workings of Genwal Coal Company, Skeen Mine, Helco Mine, Beaver Creek Mine, and the Deer Creek Mine.

The Applicant has given mine projection for the Blind Canyon and Hiawatha Coal Seams in the Mill Fork Lease. Map MFU-1840D gives the mining sequence for nineteen years in the Hiawatha Seam. These maps are projections and can change in the future due to ground condition, roof control, coal quality, mineable reserves and coal market.

Monitoring Sampling Location Maps

Elevations and locations of monitoring stations used to gather data on water quality and quantity are on Plate 1; Drawing MFS1830D – Hydrologic Map; and Drawing MFS1839D - Pre-subsidence Survey Map.

Permit Area Boundary Maps

The Applicant submitted several maps that show the permit boundaries for the Mill Fork Lease. This issue has been address below in the section called Maps, Plans and Cross Sections of Mining Operations.

Surface and Subsurface Ownership Maps

The surface and subsurface ownership maps for the Mill Fork Lease are Drawings MFS1838D and MFU1837D respectively. The maps identify the ownership of both surface and coal rights.

Surface and Subsurface Manmade Features Maps

Map MFU1840D shows that Genwal mine facilities are within 1,000 ft of the proposed permit area. The Applicant has not identified the location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings. This information must be shown on a map to meet the requirements of R645-301.521.120.

The Applicant has identified surface and subsurface man made features within, passing through, or passing over the proposed permit area see Page 5-20 and 5-21 and on Map MFS1839D.

The Applicant has shown two gas wells, one of which is proposed. This is illustrated on several of the mine maps. The gas well in Section 23 in the Mill Fork Lease will not be mined. The proposed gas well in Section 14 will be mined by longwall mining between the years 2012-2016. See map MFU1840D.

Subsurface Water Resource Maps

There are no maps showing location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

Surface Water Resource Maps

There are no known water-supply intakes for current users of surface waters flowing into, out of, and within the Mill Fork Lease hydrologic area. The water supply system in Rilda canyon is shown on maps and drawings in the existing MRP. No surface waters will receive discharges from affected areas in the proposed Mill Fork Lease area. Locations for Deer Creek Mine UPDES discharge points are shown on maps in the existing MRP. Locations of surface water bodies within the proposed Mill Fork Lease permit and adjacent areas are shown on several maps, including Plate 1; Drawing MFS1830D – Hydrologic Map; and Drawing MFS1839D - Pre-subsidence Survey Map.

Vegetation Reference Area Maps

Vegetation map, Drawing MFS1821B, designates the vegetation types within the Mill Fork Lease area. No vegetation in areas adjacent to the permit area are shown as usually required by the Division. Prior to approval, and after submittal of information required by deficiencies found in Fish and Wildlife Resource Information the Division may require areas adjacent to the permit to be mapped.

Well Maps

Locations of a gas well and a proposed gas well are shown on several maps, including the two Mine Plans, Drawings MFU1840D and MFU1841D, and the Pre-subsidence Survey Map, Drawing MFS1839D.

Contour Maps

Several maps show the existing contours of the Mill Fork Lease area, such as Drawing MFS1839D, Deer Creek Mine Mill Fork Lease ML-48258 Pre-Subsidence Survey Map. The map is at a scale of 1" = 1,000 'and has 100 foot contours.

Findings:

Maps, plans, and cross sections of resource information are not considered adequate to meet the requirements of this section. Prior to approval the Applicant must provide the following information for the Mill Fork Lease PAP in accordance with:

R645-301-512.121, The Applicant must locate all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the building.

R645-301-722.100, There are no maps showing location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas, including, but not limited to, areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross sections and contour maps.

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

Minimum Regulatory Requirements:

The objectives of this section is to ensure that the Division is provided with comprehensive and reliable information on proposed underground mining activities, and to ensure that those activities are allowed to be conducted only in compliance with the regulatory program.

Provide a general description of the mining operations proposed to be conducted during the life of the mine within the proposed permit area, including, at a minimum, the following: a narrative description of the type and method of coal mining procedures and proposed engineering techniques, anticipated annual and total production of coal, by tonnage, and the major equipment to be used for all aspects of those operations; and, a narrative explaining the construction, modification, use, maintenance, and removal of the following facilities (unless retention of such facility is necessary for postmining land use is specified.) The following facilities must be described: dams, embankments, and other impoundments; overburden and topsoil handling and storage areas and structures; coal removal, handling, storage, cleaning, and transportation areas and structures; spoil, coal processing waste, mine development waste, and noncoal waste removal, handling, storage, transportation, and disposal areas and structures; mine facilities; and, water pollution control facilities.

Analysis:

General

The Applicant plans to conduct only underground mining within the Mill Fork Lease in the near future. All coal will be shipped out of the mine by conveyor belt to the existing Deer Creek coal handling facilities. Men and some of the material will also use these facilities. Some of the equipment and material will enter the Deer Creek mine by the portal at Rilda Canyon. However, the Applicant has mentioned in the proposal that surface facilities may be constructed at Crandall Canyon. This would be a separate action and is not considered in this review.

Type and Method of Mining Operations

The Applicant has supplied information identifying the type of mining and methods to be employed to mine the Blind Canyon and Hiawatha Coal Seams. The Applicant will use continuous miner for development of longwall panels and main entry development. Longwall mining will be used to extract the majority of the coal from the Mill Fork Lease. This method yields high coal recovery and is safer than other mining methods for heavy ground cover. This is the same method being used at the Deer Creek mine today. Longwall mining will be conducted in panels trending east-west.

Structure contours are identified in Drawings MFU1828D, Hiawatha Coal Seam and MFU1827D, Blind Canyon Coal Seam. Overburden isopach maps show there is a relatively high amount of cover over mined areas. The overburden isopachs are shown in Drawings MFU1825D, Hiawatha Coal Seam and MFU1824D, Blind Canyon Seam. The shallowest overburden over the mined area is near Crandall Canyon Creek, where about 500 feet overlies

the Blind Canyon Seam. It increases over the lease to over 2,600 feet. The interburden ranges between 70 feet to 140 feet and is shown in Drawing MFU1826D.

Facilities and Structures

The Applicant has not proposed any new surface facilities on the Mill Fork Lease.

Findings:

The Applicant has met the minimum requirements of this section of the R645 Coal Rules.

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR 784.12; R645-301-526.

Minimum Regulatory Requirements:

"Existing Structure" means a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began prior to January 21, 1981.

Provide a description of each existing structure proposed to be used in connection with or to facilitate the surface coal mining and reclamation operation. The description shall include: the location; plans of the structure which describe its current condition; approximate dates on which construction of the existing structure was begun and completed; and, a showing, including relevant monitoring data or other evidence, whether the structure meets the permanent program performance standards or, if the structure does not meet the permanent program performance standards, a showing whether the structure meets the interim program performance standards.

Provide a compliance plan for each existing structure proposed to be modified or reconstructed for use in connection with or to facilitate the surface coal mining and reclamation operation. The compliance plan shall include: design specifications for the modification or reconstruction of the structure to meet the permanent program design and performance standards; a construction schedule which shows dates for beginning and completing interim steps and final reconstruction; provisions for monitoring the structure during and after modification or reconstruction to ensure that the permanent program performance standards are met; and, a showing that the risk of harm to the environment or to public health or safety is not significant during the period of modification or reconstruction.

Analysis:

The Applicant needs to state in section R645-301-526 of the PAP the type and location of each existing structure in the Mill Fork Lease. Some of those facilities are listed on Page 5-20 and 5-21. The structures listed include one operating gas well and two gas pipelines, two power transmission lines, one radio repeater station and two roads. Additional structures in the Mill Fork Lease area include the U.S. Forest Service road #244 and transmission lines in the southwest corner of the lease.

The information listed in section R645-301-526 of the PAP is for surface structures in existing disturbed areas. The reader would not know of the existing structures in the Mill Fork Leases from the information presented in that section. For clarification purposes the Applicant must list all existing structures in the Mill Fork Lease in section R645-301-526 of the PAP.

Findings:

The information provided in the proposal is not considered adequate to meet the requirements of this section. Before approval, the Applicant must provide the following in accordance with:

R645-301-526.110, The Applicant needs to list all existing structures in the Mill Fork Lease area in Section R645-301-526 of the PAP. See the analysis section for details.

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Minimum Regulatory Requirements:

Underground mining activities shall be conducted so as to maximize the utilization and conservation of the coal, while utilizing the best technology currently available to maintain environmental integrity, so that re-affecting the land in the future through surface coal mining operations is minimized.

Analysis:

The Applicant describes coal recovery on p. 5-7. Coal extraction will take place in the Hiawatha (lower) and Blind Canyon (upper) coal seams. The Applicant has planned mining operations to maximize the utilization and conservation of the coal. The mine layout for this lease is designed to mine large multi-seam areas. Both coal seams are mineable over 50 percent of the Mill Fork lease.

The Applicant will be using longwall mining for the main extraction of coal in the Mill Fork Lease. Mine layout for the Mill Fork Lease is illustrated on Maps MFU1840D and MFU1841D. Continuous miners will be used for development of longwall panels and main entries. This is the current method of mining at the Deer Creek and in most of Carbon and Emery Counties. This method of mining yields the highest safety and coal recovery possible for underground coal mining. A coal recovery plan has been approved by the BLM in the R2P2 document.

In developing the maximum recovery plans, the Applicant had to consider the amount of overlying strata above the coal seams and the amount of interburden between seams. Regulatory restrictions on mining, such as escarpment protection, barriers and perennial streams buffer zones were also evaluated and incorporated into the PAP.

Findings:

The Applicant has met the minimum requirements of this section.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Minimum Regulatory Requirements:

Renewable resources survey

Include a survey, which shall show whether structures or renewable resource lands exist within the proposed permit area and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of such structures or renewable resource lands. If the survey shows that no such structures or renewable resource lands exist, or no such material damage or diminution could be caused in the event of mine subsidence, and if the Division agrees with such conclusion, no further information need be provided in the application under this section.

Subsidence control plan

In the event the survey shows that such structures or renewable resource lands exist, and that subsidence could cause material damage or diminution of value or foreseeable use of the land, or if the Division determines that such damage or diminution could occur, the application shall include a subsidence control plan which shall contain the following information:

1.) A description of the method of coal removal, such as longwall mining, room-and-pillar removal, hydraulic mining, or other extraction methods, including the size, sequence, and timing for the development of underground workings.
2.) A map of underground workings which describes the location and extent of areas in which planned-subsidence mining methods will be used and which includes all areas where measures will be taken to prevent or minimize subsidence and subsidence related damage and where appropriate, to correct subsidence-related material damage.
3.) A description of the physical conditions, such as depth of cover, seam thickness, and lithology, which affect the likelihood or extent of subsidence and subsidence-related damage.
4.) A description of monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage.
5.) Except for those areas where planned subsidence is projected to be used, a detailed description of the subsidence control measures that will be taken to prevent or minimize subsidence and subsidence-related damage, including, but not limited to: backstowing or backfilling of voids; leaving support pillars of coal; leaving areas in which no coal is removed, including a description of the overlying area to be protected by leaving the coal in place; and, taking measures on the surface to prevent material damage or lessening of the value or reasonably foreseeable use of the surface.
6.) A description of the anticipated effects of planned subsidence, if any.
7.) A description of the measures to be taken to mitigate or remedy any subsidence-related material damage to, or diminution in value or reasonably foreseeable use of the land, or structures or facilities to the extent required under State law.
8.) Other information specified by the Division as necessary to demonstrate that the operation will be conducted in accordance with the performance standards for subsidence control.

Performance standards for subsidence control

The operator shall either adopt measures consistent with known technology which prevent subsidence from causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of surface lands; or, adopt mining technology which provides for planned subsidence in a predictable and controlled manner. Nothing in this part shall be construed to prohibit the standard method of room-and-pillar mining.

The operator shall comply with all provisions of the approved subsidence control plan.

The operator shall correct any material damage resulting from subsidence caused to surface lands, to the extent technologically and economically feasible, by restoring the land to a condition capable of maintaining the value and reasonably foreseeable uses which it was capable of supporting before subsidence, and, to the extent required under applicable provisions of

State law, either correct material damage resulting from subsidence caused to any structures or facilities by repairing the damage or compensate the owner of such structures or facilities in the full amount of the diminution in value resulting from the subsidence. Repair of damage includes rehabilitation, restoration, or replacement of damaged structures or facilities. Compensation may be accomplished by the purchase prior to mining of a non-cancelable premium-prepaid insurance policy.

Underground mining activities shall not be conducted beneath or adjacent to: public buildings and facilities; churches, schools, and hospitals; or, impoundments with a storage capacity of 20 acre-feet or more or bodies of water with a volume of 20 acre-feet or more, unless the subsidence control plan demonstrates that subsidence will not cause material damage to, or reduce the reasonably foreseeable use of, such features or facilities. If the Division determines that it is necessary in order to minimize the potential for material damage to the features or facilities described above or to any aquifer or body of water that serves as a significant water source for any public water supply system, it may limit the percentage of coal extracted under or adjacent thereto.

If subsidence causes material damage to any of the features or facilities, the Division may suspend mining under or adjacent to such features or facilities until the subsidence control plan is modified to ensure prevention of further material damage to such features or facilities.

The Division shall suspend underground mining activities under urbanized areas, cities, towns, and communities, and adjacent to industrial or commercial buildings, major impoundments, or perennial streams, if imminent danger is found to inhabitants of the urbanized areas, cities, towns, or communities.

Within a schedule approved by the Division, the operator shall submit a detailed plan of the underground workings. The detailed plan shall include maps and descriptions, as appropriate, of significant features of the underground mine, including the size, configuration, and approximate location of pillars and entries, extraction ratios, measures taken to prevent or minimize subsidence and related damage, areas of full extraction, and other information required by the Division. Upon request of the operator, information submitted with the detailed plan may be held as confidential.

Notification

At least 6 months prior to mining, or within that period if approved by the Division, the underground mine operator shall mail a notification to all owners and occupants of surface property and structures above the underground workings. The notification shall include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

Analysis:

Renewable Resources Survey

The Applicant has identified that renewable resources exist in the area. Those resources include springs, water seeps, grazing land, timber and wildlife. Manmade features in the area include unimproved roads, trails, a gas well and pipelines and power transmission lines.

Subsidence Control Plan

The Applicant has a Subsidence Control Plan on Page 5-20 and 5-21. The Mill Fork Lease has one operating gas well and two gas pipelines, two power transmission lines, one radio repeater station and two roads. The Applicant has stated that no mining will occur under any of these structures except for US Forest Service road #244 (unimproved dirt track) see Page 5-20 and 5-21. However, Map MFS1839D depicts longwall mining in the Hiawatha seam under the Utah Power 345 KV transmission line that crosses the southwest corner of the permit area in Section 22, T. 16S. R.6 E. thru 2nd Left longwall panel. This is inconsistent between the text on Page 5-21 and Map MFS1839D. If the power line is within the subsidence area, the Applicant will need to at address R645-301-525.120, R645-301-525.312 and R645-301-525.520. The 345 KV transmission line will be considered a related structure to non-commercial buildings supplying power to residential dwellings.

Subsidence will occur outside the northern permit boundary of the Mill Fork Lease and Genwal Lease ML-21568 see Page 5-29. Genwal will leave 100 ft. barrier pillar between the last longwall panel and the Mill Fork Lease line. By leaving only a 100 ft. barrier, it is likely that Genwal will subside onto the Mill Fork Lease. In addition, PacifiCorp will leave a 100 ft. coal barrier between the last longwall panel and the Mill Fork Lease line, causing possible subsidence in Lease ML-21568 (Genwal Lease).

The Division considers subsidence to be part of the coal mining operations and therefore, must be confined to the permit boundaries. (See R645-300-141.) Therefore, the Applicant must contain all subsidence from the Mill Fork Lease to the Deer Creek permit boundary.

Longwall mining consists of mining sequential coal blocks (panels) leaving no barrier pillars. Usually when barrier pillars are left between longwall panels, it is for ground control in the underground workings.

The Applicant must give the Division a map that shows the location of all areas that are anticipated to be subsided (area within the angle-of-draw.) The map must also include all features such as roads and pipelines that need to be protected.

Performance Standards for Subsidence Control

The Applicant has stated on Page 5-29, that a 100-foot barrier along the lease/permit area boundary in the Blind Canyon seam as a precaution against overlapping the underlying Genwal workings in the Hiawatha seam. Map MFU1826D verifies that 100 ft. barrier will be left along the northern boundary of the Blind Canyon seam (next to the Genwal Mine). However, on page 5-29 of the PAP the Applicant states, "That no subsidence protection barrier will be left at the north boundary in the Hiawatha, that they will mine to the north boundary." But the map shows a ~400 foot barrier in the Hiawatha. The Applicant needs to clarify what type of barrier pillar will be left in the north boundary of the Hiawatha seam.

Notification

The Applicant has not committed to mail a notification to the water conservancy district; all owner-occupants of surface property and structures, above the underground workings at least six months prior to mining. This is a requirement of R645-301.525.700.

Findings:

The information provided in the proposal is not considered adequate to meet the requirements of this section. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-525.120, If the Applicant decides to undermine or subside any portion of the 345 KV transmission line then they must include a narrative indicating whether subsidence, if occurred, could cause material damage to the structure.

R645-301-525.312, If the Applicant decides to undermine or subside any portion of the 345 KV transmission line, the Applicant will need the written consent of the owner (Utah Power).

R645-301-525.520, The Applicant will need to purchase before mining a non-cancelable premium-prepaid insurance policy, but only if the Applicant plans to undermine or potentially subside any portion of the 345KV transmission line.

R645-301-525.700, At least six months prior to mining, the underground mining operator will mail a notification to the water conservancy district and Utah Power (only if 345 KV transmission line is to be subsided). The notification will include, at a minimum, identification of specific areas in which mining will take place, dates that specific areas will be undermined, and the location or locations where the operator's subsidence control plan may be examined.

R645-301-521.142, R645-301-525.110 and R645-301.525.240, The Applicant must give the Division a map the show the areas that are scheduled to subside (area within the angle-of-draw) and those features that will be protected from subsidence.

R645-301-121.200, The Applicant must clarify the existence of barrier pillar along the northern border of the Hiawatha seam. On page 5-29 of the PAP the Applicant states, "That no subsidence protection barrier will be left at the north boundary in the Hiawatha, that they will mine to the north boundary." But the map shows a ~400 foot barrier in the Hiawatha. The Applicant needs to clarify what type of barrier pillar will be left in the north boundary of the Hiawatha seam.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR 817.99; R645-301-515.

Minimum Regulatory Requirements:

At any time a slide occurs which may have a potential adverse effect on public, property, health, safety, or the environment, the person who conducts the underground mining activities shall notify the Division by the fastest available means and comply with any remedial measures required by the Division.

The permit application will incorporate a description of notification when potential impoundment hazards exist. The requirements for the description are: If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment will promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division will be notified immediately. The Division will then notify the appropriate agencies that other emergency procedures are required to protect the public.

Analysis:

There should be no slides occurring because all mining activities are underground. If slides should occur, it would most likely be caused by subsidence. The remedy for these slides would fall under the subsidence mitigation plan.

Findings:

The Applicant has met the minimum requirements of this section.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Minimum Regulatory Requirements:

Protection and enhancement plan

Each application shall include a description of how, to the extent possible using the best technology currently available, the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface coal mining and reclamation operations and how enhancement of these resources will be achieved where practicable. This description shall apply, at a minimum, to species and habitats identified. The description shall include: protective measures that will be used during the active mining phase of operation. Such measures may include the establishment of buffer zones, the selective location and special design of haul roads and powerlines, and the monitoring of surface water quality and quantity; and, enhancement measures that will be used during the reclamation and postmining phase of operation to develop aquatic and terrestrial habitat. Such measures may include restoration of streams and other wetlands, retention of ponds and impoundments, establishment of vegetation for wildlife food and cover, and the placement of perches and nest boxes. Where the plan does not include enhancement measures, a statement shall be given explaining why enhancement is not practicable.

Each operator shall, to the extent possible using the best technology currently available: ensure that electric powerlines and other transmission facilities used for, or incidental to, underground mining activities on the permit area are designed and constructed to minimize electrocution hazards to raptors, except where the Division determines that such requirements are unnecessary; locate and operate haul and access roads so as to avoid or minimize impacts on important fish and wildlife species or other species protected by State or Federal law; design fences, overland conveyors, and other potential barriers to permit passage for large mammals except where the Division determines that such requirements are unnecessary; and, fence, cover, or use other appropriate methods to exclude wildlife from ponds which contain hazardous concentrations of toxic-forming materials.

Endangered and threatened species

No underground mining activity shall be conducted which is likely to jeopardize the continued existence of endangered or threatened species listed by the Secretary or which is likely to result in the destruction or adverse modification of designated critical habitats of such species in violation of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The operator shall promptly report to the Division any State- or federally-listed endangered or threatened species within the permit area of which the operator becomes aware. Upon notification, the Division shall consult with appropriate State and Federal fish and wildlife agencies and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

Bald and golden eagles

No underground mining activity shall be conducted in a manner which would result in the unlawful taking of a bald or golden eagle, its nest, or any of its eggs. The operator shall promptly report to the Division any golden or bald eagle nest within the permit area of which the operator becomes aware. Upon notification, the Division shall consult with the U.S. Fish and Wildlife Service and also, where appropriate, the State fish and wildlife agency and, after consultation, shall identify whether, and under what conditions, the operator may proceed.

Nothing in these regulatory requirements shall authorize the taking of an endangered or threatened species or a bald or golden eagle, its nest, or any of its eggs in violation of the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq., or the Bald Eagle Protection Act, as amended, 16 U.S.C. 668 et seq.

Wetlands and habitats of unusually high value for fish and wildlife

The operator conducting underground mining activities shall avoid disturbances to, enhance where practicable, restore, or replace, wetlands and riparian vegetation along rivers and streams and bordering ponds and lakes. Underground mining activities shall avoid disturbances to, enhance where practicable, or restore habitats of unusually high value for fish and wildlife.

Analysis:

Protection and Enhancement Plan

Second mining is expected to occur under the Castlegate Sandstone escarpments on the east side of the permit area. This has caused cliff failure and rock falls in other areas mined in the Deer Creek permit area (section R645-301-525. Subsidence Control Plan). The Pre-Subsidence Survey Map (MFS-1839D) shows the Castlegate Sandstone outcrops. Escarpments on the Joes Valley side will be protected from subsidence.

The application states on page 3-10 and 3-11 that experience from the existing PacifiCorp permit areas has shown that the effects of subsidence on grazing and grazing lands, timber resources (not identified as a land use) or access to timber resources, wildlife resources are minimal. No data or qualified person has been attributed to these statements. Data must be provided or the name and qualifications of the person making the statement must be provided.

Endangered and Threatened Species

An analysis of the operational effects of underground mining on threatened, endangered, and sensitive plant and animal species found within the permit area is required.

Bald and Golden Eagles

No protection plan has been provided in the MRP for the golden eagles in the proposed permit area. Page 5-22 of the application states that cliff escarpment failure could occur in section 1 where an eagle nest is located. The MRP must describe the protection measures to be used and continued resource information gathering such as annual raptor monitoring as part of the plan.

Findings:

Information provided in the application is not considered adequate to meet the minimum Fish and Wildlife Information section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-130, Data must be presented to support the statement in the application that experience from the existing PacifiCorp permit areas has shown that the effects of subsidence on grazing and grazing lands, timber resources or access to timber resources, wildlife resources are minimal. No data or qualified person has been attributed to these statements. Data must be provided or the name and qualifications of the person making the statement must be provided.

R645-301-333, A statement must be provided concerning the operational effects of underground mining on the threatened, endangered, and sensitive plant and animal species found within the permit area.

R645-301-333.300, The MRP must describe the protection protective measures and continued resource information gathering for golden eagles.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Minimum Regulatory Requirements:

Each application will contain a plan for protection of vegetation, fish, and wildlife resources throughout the life of the mine. The plan will provide a description of the measures taken to disturb the smallest practicable area at any one time and through prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion. This may include part or all of the plan for final revegetation as described in reclamation plan for revegetation.

For UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES a description of the anticipated impacts of subsidence on renewable resource lands and how such impact will be mitigated needs to be presented.

A description of how, to the extent possible, using the best technology currently available, the operator will minimize disturbances and adverse impacts. This description will include protective measures that will be used during the active mining phase of operation. Such measures may include the establishment of buffer zones, the selective location and special design of haul roads and powerlines, the monitoring of surface water quality and quantity, and through prompt establishment and maintenance of vegetation for interim stabilization of disturbed areas to minimize surface erosion.

Analysis:

Specific information concerning the effects of underground coal mining operations on rare and sensitive plant species if found under the Fish and Wildlife Information section.

In order to mitigate any impacts to vegetation from subsidence the impacts must be located, measured and quantified. A monitoring system must be described in the MRP that will record change over time of the vegetation. This is also a lease requirement described as Forest Service Stipulation #7. The Forest Service, in past PacifiCorp leases, has allowed color infrared photographs at five year intervals to be used as a method to monitor potential vegetation change over time.

Findings:

Information provided in the application is not considered adequate to meet the minimum Vegetation section of the regulations. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-332, A monitoring system must be described in the MRP that will record any vegetation change over time from subsidence.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Minimum Regulatory Requirements:

Road classification system

Each road shall be classified as either a primary road or an ancillary road. A primary road is any road which is: used for transporting coal or spoil; frequently used for access or other purposes for a period in excess of six months; or, to be retained for an approved postmining land use. An ancillary road is any road not classified as a primary road.

Plans and drawings

Each applicant for an underground coal mining and reclamation permit shall submit plans and drawings for each road to be constructed, used, or maintained within the proposed permit area. To ensure environmental protection appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, and culvert size, in accordance with current, prudent engineering practices, and any necessary design criteria established by the Division. The plans and drawings shall:

1.) Include a map, appropriate cross sections, design drawings, and specifications for road widths, gradients, surfacing materials, cuts, fill embankments, culverts, bridges, drainage ditches, low-water crossings, and drainage structures;
2.) Contain the drawings and specifications of each proposed road that is located in the channel of an intermittent or perennial stream, as necessary for approval of the road by the Division;
3.) Contain the drawings and specifications for each proposed ford of perennial or intermittent streams that is used as a temporary route, as necessary for approval of the ford by the Division;
4.) Contain a description of measures to be taken to obtain approval of the Division for alteration or relocation of a natural stream channel;
5.) Contain the drawings and specifications for each low-water crossing of perennial or intermittent stream channels so that the Division can maximize the protection of the stream; and,
6.) Describe the plans to remove and reclaim each road that would not be retained under an approved postmining land use, and the schedule for this removal and reclamation.

Performance standards

All roads road shall be located, designed, constructed, reconstructed, used, maintained, and reclaimed so as to:

1.) Control or prevent erosion, siltation, and the air pollution attendant to erosion, including road dust and dust occurring on other exposed surfaces, by measures such as vegetating, watering, using chemical or other dust suppressants, or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;
2.) Control or prevent damage to fish, wildlife, or other habitat and related environmental values;
3.) Control or prevent additional contributions of suspended solids to streamflow or runoff outside the permit area;
4.) Neither cause nor contribute to, directly or indirectly, the violation of State or Federal water quality standard applicable to receiving waters;
5.) Refrain from seriously altering the normal flow of water in streambeds or drainage channels;
6.) Not locate any road in the channel of an intermittent or perennial stream unless specifically approved by the Division. Roads shall be located to minimize downstream sedimentation and flooding;

7.) Prevent or control damage to public or private property, including the prevention or mitigation of adverse effects on lands within the boundaries of units of the National Park System, the National Wildlife Refuge System, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including designated study rivers, and National Recreation Areas designated by Act of Congress;
8.) Use nonacid- and nontoxic-forming substances in road surfacing: and,
9.) Maintain all roads to meet the performance standards of this part and any additional criteria specified by the Division. A road damaged by a catastrophic event, such as a flood or earthquake, shall be repaired as soon as is practicable after the damage has occurred.

In addition to the above, primary roads shall meet the following requirements:

1.) The construction or reconstruction of primary roads shall be certified in a report to the Division by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the construction or reconstruction of primary roads, a qualified registered professional land surveyor, with experience in the design and construction of roads. The report shall indicate that the primary road has been constructed or reconstructed as designed and in accordance with the approved plan;
2.) Each primary road embankment shall have a minimum static factor of 1.3. The Division may establish engineering design standards for primary roads through the State program approval process, in lieu of engineering tests, to establish compliance with the minimum static safety factor of 1.3 for all embankments;
3.) Primary roads shall be located to minimize erosion, insofar as is practicable, on the most stable available surface;
4.) Fords of perennial or intermittent streams by primary roads are prohibited unless they are specifically approved by the Division as temporary routes during periods of road construction.
5.) Each primary road shall be constructed or reconstructed, and maintained to have adequate drainage control, using structures such as, but not limited to bridges, ditches, cross drains, and ditch relief drains. The drainage control system shall be designed to safely pass the peak runoff from a 10-year, 6-hour precipitation event, or greater event as specified by the Division. Drainage pipes and culverts shall be installed as designed, and maintained in a free and operating condition and to prevent or control erosion at inlets and outlets. Drainage ditches shall be constructed and maintained to prevent uncontrolled drainage over the road surface and embankment. Culverts shall be installed and maintained to sustain the vertical soil pressure, the passive resistance of the foundation, and the weight of vehicles using the road. Natural stream channels shall not be altered or relocated without the prior approval of the Division. Except as specifically approved by the Division, structures for perennial or intermittent stream channel crossings shall be made using bridges, culverts, low-water crossings, or other structures designed, constructed, and maintained using current, prudent engineering practices. The Division shall ensure that low-water crossings are designed, constructed, and maintained to prevent erosion of the structure or streambed and additional contributions of suspended solids to streamflow.
6.) Primary roads shall be surfaced with material approved by the Division as being sufficiently durable for the anticipated volume of traffic and the weight and speed of vehicles using the road.

Primary road certification

The plans and drawings for each primary road shall be prepared by, or under the direction of, and certified by a qualified registered professional engineer, or in any State which authorizes land surveyors to certify the design of primary roads a qualified registered professional land surveyor, experienced in the design and construction of roads, as meeting the requirements of this chapter; current, prudent engineering practices; and any design criteria established by the Division.

Other Transportation Facilities

The plan must include a detailed description of each road, conveyor, and rail system to be constructed, used, or maintained within the proposed permit area. The description will include a map, appropriate cross sections, and the following: specifications for each road width, road gradient, road surface, road cut, fill embankment, culvert, bridge, drainage ditch, and drainage structure; measures to be taken to obtain Division approval for alteration or relocation of a natural drainageway; a maintenance plan describing how roads will be maintained throughout their life to meet the design standards throughout their use; a commitment that if a road is damaged by a catastrophic event, such as a flood or earthquake, the road will be repaired as soon as practical after the damage has occurred; a report of appropriate geotechnical analysis, where approval of the Division is required for alternative specifications, or for steep cut slopes.

Analysis:

Road Classification System

No roads will be built. All access to the Mill Fork Lease will be from underground.

Findings:

The Applicant has met the minimum requirements of this section.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Minimum Regulatory Requirements:

Disposal of noncoal mine wastes

Noncoal mine wastes including, but not limited to, grease, lubricants, paints, flammable liquids, garbage, abandoned mining machinery, lumber, and other combustible materials generated during mining activities shall be placed and stored in a controlled manner in a designated portion of the permit area. Placement and storage shall ensure that leachate and surface runoff do not degrade surface or ground water, that fires are prevented, and that the area remains stable and suitable for reclamation and revegetation compatible with the natural surroundings.

Final disposal of noncoal mine wastes shall be in a designated disposal site in the permit area or a State-approved solid waste disposal area. Disposal sites in the permit area shall be designed and constructed to ensure that leachate and drainage from the noncoal mine waste area does not degrade surface or underground water. Wastes shall be routinely compacted and covered to prevent combustion and windborne waste. When the disposal is completed, a minimum of 2 feet of soil cover shall be placed over the site, slopes stabilized, and revegetated. Operation of the disposal site shall be conducted in accordance with all local, State, and Federal requirements.

At no time shall any noncoal mine waste be deposited in a refuse pile or impounding structure, nor shall any excavation for a noncoal mine waste disposal site be located within 8 feet of any coal outcrop or coal storage area.

Any noncoal mine waste defined as "hazardous" under Section 3001 of the Resource Conservation and Recovery Act (RCRA) (Pub. L. 94-580, as amended) and 40 CFR Part 261 shall be handled in accordance with the requirements of Subtitle C of RCRA and any implementing regulations.

Coal mine waste

Each plan shall contain descriptions, including appropriate maps and cross-section drawings of the proposed disposal methods and sites for placing underground development waste and excess spoil generated at surface areas affected by surface operations and facilities. Each plan shall describe the geotechnical investigation, design, construction, operation, maintenance, and removal, if appropriate, of the structures.

All coal mine waste shall be placed in new or existing disposal areas within a permit area that are approved by the Division for this purpose. Coal mine waste shall be placed in a controlled manner to:

1.) Minimize adverse effects of leachate and surface-water runoff on surface- and ground-water quality and quantity;
2.) Ensure mass stability and prevent mass movement during and after construction;
3.) Ensure that the final disposal facility is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use;
4.) Not create a public hazard; and
5.) Prevent combustion.

Coal mine waste materials from activities located outside a permit area may be disposed of in the permit area only if approved by the Division. Approval shall be based upon a showing that such disposal will be in accordance with the standards of this section.

The disposal facility shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer, experienced in the design of similar earth and waste

structures, shall certify the design of the disposal facility. The disposal facility shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments must be stable under all conditions of construction. Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of the foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the disposal facility.

If any examination or inspection discloses that a potential hazard exists, the Division shall be informed promptly of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

Refuse piles

Refuse piles shall meet the requirements of coal mine waste, the additional requirements provided below and the requirements of 30 CFR Sections 77.214 and 77.215.

If the disposal area contains springs, natural or manmade water courses, or wet-weather seeps, the design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility, and ensure stability. Uncontrolled surface drainage may not be diverted over the outslope of the refuse pile. Runoff from areas above the refuse pile and runoff from the surface of the refuse pile shall be diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event. Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.

Underdrains shall comply with the general requirements for the disposal of excess spoil.

Slope protection shall be provided to minimize surface erosion at the site. All disturbed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

All vegetative and organic materials shall be removed from the disposal area prior to placement of coal mine waste. Topsoil shall be removed, segregated and stored or redistributed. If approved by the Division, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

The final configuration of the refuse pile shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the refuse pile if required for stability, control of erosion, conservation of soil moisture, or facilitation of the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

No permanent impoundments shall be allowed on the completed refuse pile. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation, and if they are not incompatible with the stability of the refuse pile.

Following final grading of the refuse pile, the coal mine waste shall be covered with a minimum of 4 feet of the best available, nontoxic and noncombustible material, in a manner that does not impede drainage from the underdrains. The Division may allow less than 4 feet of cover material based on physical and chemical analyses which show that the revegetation requirements will be met.

A qualified registered professional engineer, or other qualified professional specialist under the direction of the professional engineer, shall inspect the refuse pile during construction. The professional engineer or specialist shall be experienced in the construction of similar earth and waste structures. Such inspection shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include, at a minimum: Foundation preparation including the removal of all organic material and topsoil; Placement of underdrains and protective filter systems; Installation of final surface drainage systems; and, The final graded and revegetated facility. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of coal mine waste materials. More frequent inspections shall be conducted if a danger of harm exists to the public health and safety or the environment. Inspections shall continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

The qualified registered professional engineer shall provide a certified report to the Division promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and this Chapter. The report shall include appearances of instability, structural weakness, and other hazardous conditions. The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase shall be certified separately. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report shall be retained at or near the minesite.

Impounding structures

New and existing impounding structures constructed of coal mine waste or intended to impound coal mine waste shall meet the requirements for coal mine waste.

Coal mine waste shall not be used for construction of impounding structures unless it has been demonstrated to the Division that the stability of such a structure conforms to the requirements of this part and that the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The stability of the structure and the potential impact of acid mine seepage through the impounding structure shall be discussed in detail in the design plan submitted to the Division.

Each impounding structure constructed of coal mine waste or intended to impound coal mine waste shall be designed, constructed, and maintained in accordance with the requirements for temporary impoundments. Such structures may not be retained permanently as part of the approved postmining land use.

Each impounding structure constructed of coal mine waste or intended to impound coal mine waste that meets the criteria of 30 CFR Sec. 77.216(a) shall have sufficient spillway capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control, the probable maximum precipitation of a 6-hour precipitation event, or greater event as specified by the Division. Spillways and outlet works shall be designed to provide adequate protection against erosion and corrosion. Inlets shall be protected against blockage.

Runoff from areas above the disposal facility or runoff from the surface of the facility that may cause instability or erosion of the impounding structure shall be diverted into a stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour design precipitation event.

Impounding structures constructed of or impounding coal mine waste shall be designed and function so that at least 90 percent of the water stored during the design precipitation event can be removed within a 10-day period.
Burning and burned waste utilization

Coal mine waste fires shall be extinguished by the person who conducts the surface mining activities, in accordance with a plan approved by the Division and the Mine Safety and Health Administration. The plan shall contain, at a minimum, provisions to ensure that only those persons authorized by the operator, and who have an understanding of the procedures to be used, shall be involved in the extinguishing operations. No burning or unburned coal mine waste shall be removed from a permitted disposal area without a removal plan approved by the Division. Consideration shall be given to potential hazards to persons working or living in the vicinity of the structure.

Return of coal processing waste to abandoned underground workings

Each plan shall describe the design, operation and maintenance of any proposed coal processing waste disposal facility, including flow diagrams and any other necessary drawings and maps, for the approval of the Division and the Mine Safety and Health Administration.

Each plan shall describe the source and quality of waste to be stowed, area to be backfilled, percent of the mine void to be filled, method of constructing underground retaining walls, influence of the backfilling operation on active underground mine operations, surface area to be supported by the backfill, and the anticipated occurrence of surface effects following backfilling.

The applicant shall describe the source of the hydraulic transport mediums, method of dewatering the placed backfill, retainment of water underground, treatment of water if released to surface streams, and the effect on the hydrologic regime.

The plan shall describe each permanent monitoring well to be located in the backfilled area, the stratum underlying the mined coal, and gradient from the backfilled area.

The requirements of this section shall also apply to pneumatic backfilling operations, except where the operations are exempted by the Division from requirements specifying hydrologic monitoring.

Excess Spoil: General Requirements

Excess spoil shall be placed in designated disposal areas within the permit area, in a controlled manner to: minimize the adverse effects of leachate and surfacewater runoff from the fill on surface and ground waters; ensure mass stability and prevent mass movement during and after construction; and, ensure that the final fill is suitable for reclamation and revegetation compatible with the natural surroundings and the approved postmining land use.

The fill and appurtenant structures shall be designed using current, prudent engineering practices and shall meet any design criteria established by the Division. A qualified registered professional engineer experienced in the design of earth and rock

fills shall certify the design of the fill and appurtenant structures. The fill shall be designed to attain a minimum long-term static safety factor of 1.5. The foundation and abutments of the fill must be stable under all conditions of construction.

The disposal area shall be located on the most moderately sloping and naturally stable areas available, as approved by the Division, and shall be placed, where possible, upon or above a natural terrace, bench, or berm, if such placement provides additional stability and prevents mass movement.

Sufficient foundation investigations, as well as any necessary laboratory testing of foundation material, shall be performed in order to determine the design requirements for foundation stability. The analyses of foundation conditions shall take into consideration the effect of underground mine workings, if any, upon the stability of the fill and appurtenant structures. When the slope in the disposal area is in excess of 2.8h:1v (36 percent), or such lesser slope as may be designated by the Division based on local conditions, keyway cuts (excavations to stable bedrock) or rock toe buttresses shall be constructed to ensure stability of the fill. Where the toe of the spoil rests on a downslope, stability analyses shall be performed to determine the size of rock toe buttresses and keyway cuts.

All vegetative and organic materials shall be removed from the disposal area prior to placement of excess spoil. Topsoil shall be removed, segregated and stored and redistributed in accordance with the requirements for topsoil handling. If approved by the Division, organic material may be used as mulch or may be included in the topsoil to control erosion, promote growth of vegetation, or increase the moisture retention of the soil.

Excess spoil shall be transported and placed in a controlled manner in horizontal lifts not exceeding 4 feet in thickness; concurrently compacted as necessary to ensure mass stability and to prevent mass movement during and after construction; graded so that surface and subsurface drainage is compatible with the natural surroundings; and covered with topsoil or substitute material. The Division may approve a design which incorporates placement of excess spoil in horizontal lifts other than 4 feet in thickness when it is demonstrated by the operator and certified by a qualified registered professional engineer that the design will ensure the stability of the fill and will meet all other applicable requirements.

The final configuration of the fill shall be suitable for the approved postmining land use. Terraces may be constructed on the outslope of the fill if required for stability, control of erosion, to conserve soil moisture, or to facilitate the approved postmining land use. The grade of the outslope between terrace benches shall not be steeper than 2h:1v (50 percent).

No permanent impoundments are allowed on the completed fill. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation; and if they are not incompatible with the stability of the fill.

Excess spoil that is acid- or toxic-forming or combustible shall be adequately covered with nonacid, nontoxic and noncombustible material, or treated, to control the impact on surface and ground water, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design shall include diversions and underdrains as necessary to control erosion, prevent water infiltration into the fill, and ensure stability. Underdrains shall consist of durable rock or pipe, be designed and constructed using current, prudent engineering practices and meet any design criteria established by the Division. The underdrain system shall be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and shall be protected from piping and contamination by an adequate filter. Rock underdrains shall be constructed of durable, nonacid-, nontoxic-forming rock (e.g., natural sand and gravel, sandstone, limestone, or other durable rock) that does not slake in water or degrade to soil materials, and which is free or coal, clay, or other nondurable material. Perforated pipe underdrains shall be corrosion resistant and shall have characteristics consistent with the long-term life of the fill.

Slope protection shall be provided to minimize surface erosion at the site. All distributed areas, including diversion channels that are not riprapped or otherwise protected, shall be revegetated upon completion of construction.

A qualified registered professional engineer or other qualified professional specialist under the direction of the professional engineer, shall periodically inspect the fill during construction. The professional engineer or specialist shall be experienced in the construction of earth and rock fills. Such inspections shall be made at least quarterly throughout construction and during critical construction periods. Critical construction periods shall include at a minimum: foundation preparation, including the removal of all organic material and topsoil; placement of underdrains and protective filter systems; installation of final surface drainage systems; and, the final graded and revegetated fill. Regular inspections by the engineer or specialist shall also be conducted during placement and compaction of fill materials. The qualified registered professional engineer shall provide a certified report to the Division promptly after each inspection that the fill has been constructed and maintained as designed and in accordance with the regulatory requirements. The report shall include appearances of instability, structural weakness, and other hazardous conditions. The certified report on the drainage system and protective filters shall include color photographs taken during and after construction, but before underdrains are covered with excess spoil. If the underdrain system is constructed in phases, each phase shall be certified separately. Where excess durable rock spoil is placed in single or multiple lifts such that the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, color

photographs shall be taken of the underdrain as the underdrain system is being formed. The photographs accompanying each certified report shall be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site. A copy of each inspection report shall be retained at or near the mine site.

Coal mines waste may be disposed of in excess spoil fills if approved by the Division and, if such waste is: placed in accordance with the requirements for refuse piles; nontoxic and nonacid forming; and, of the proper characteristics to be consistent with the design stability of the fill.

Spoil resulting from face-up operations for underground coal mine development may be placed at drift entries as part of a cut-and-fill structure, if the structure is less than 400 feet in horizontal length and designed in accordance with the general requirements for the disposal of excess spoil.

Excess Spoil: Valley fills/head-of-hollow fills

Valley fills and head-of-hollow fills shall meet the general requirements for excess spoil and the following additional requirements.

The top surface of the completed fill shall be graded such that the final slope after settlement will be toward properly designed drainage channels. Uncontrolled surface drainage may not be directed over the outslope of the fill. Runoff from areas above the fill and runoff from the surface of the fill shall be diverted into stabilized diversion channels and to safely pass the runoff from a 100-year, 6-hour precipitation event.

A rock-core chimney drain may be used in a head-of-hollow fill, instead of the underdrain and surface diversion system normally required, as long as the fill is not located in an area containing intermittent or perennial streams. A rock-core chimney drain may be used in a valley fill if the fill does not exceed 250,000 cubic yards of material and upstream drainage is diverted around the fill. The alternative rock-core chimney drain system shall be incorporated into the design and construction of the fill as follows:

1.) The fill shall have, along the vertical projection of the main buried stream channel or rill, a vertical core of the durable rock at least 16 feet thick which shall extend from the toe of the fill to the head of the fill and from the base of the fill to the surface of the fill. A system of lateral rock underdrains shall connect this rock core to each area of potential drainage or seepage in the disposal area. The underdrain system and rock core shall be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area.

2.) A filter system to ensure the proper long-term functioning of the rock core shall be designed and constructed using current, prudent engineering practices.

3.) Grading may drain surface water away from the outslope of the fill and toward the rock core. In no case, however, may intermittent or perennial streams be diverted into the rock core. The maximum slope of the top of the fill shall be 33h:1v (3 percent). A drainage pocket may be maintained at the head of the fill during and after construction, to intercept surface runoff and discharge the runoff through or over the rock drain, if stability of the fill is not impaired. In no case shall this pocket or sump have a potential capacity for impounding more than 10,000 cubic feet of water. Terraces on the fill shall be graded with a 3- to 5-percent grade toward the fill and a 1-percent slope toward the rock core.

Excess Spoil: Durable rock fills

The Division may approve the alternative method of disposal of excess durable rock spoil by gravity placement in single or multiple lifts, provided the following conditions are met: durable rock fills shall meet the general requirements for excess spoil except as provided in this section; the excess spoil consists of at least 80 percent, by volume, durable, nonacid- and nontoxic-forming rock (e.g., sandstone or limestone) that does not slake in water and will not degrade to soil material. Where used, noncemented clay shale, clay spoil, soil, or other nondurable excess spoil material shall be mixed with excess durable rock spoil in a controlled manner such that no more than 20 percent of the fill volume, as determined by tests performed by a registered engineer and approved by the Division, is not durable rock; a qualified registered professional engineer certifies that the design will ensure the stability of the fill and meet all other applicable requirements; the fill is designed to attain a minimum long-term static safety factor of 1.5, and an earthquake safety factor of 1.1; the underdrain system may be constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, provided the resulting underdrain system is capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and the other requirements for drainage control are met; and, surface water runoff from areas adjacent to and above the fill is not allowed to flow onto the fill and is diverted into stabilized diversion channels designed to safely pass the runoff from a 100-year, 6-hour precipitation event.

Excess Spoil: Preexisting benches

The Division may approve the disposal of excess spoil through placement on preexisting benches, provided that the general requirements for excess spoil and the requirements of this section are met.

Excess spoil shall be placed only on the solid portion of the preexisting bench. The fill shall be designed, using current, prudent engineering practices, to attain a long-term static safety factor of 1.3 for all portions of the fill. The preexisting bench shall be backfilled and graded to achieve the most moderate slope possible which does not exceed the angle of repose, and eliminate the highwall to the maximum extent technically practical.

Disposal of excess spoil from an upper actively mined bench to a lower preexisting bench by means of gravity transport may be approved by the Division provided that: the gravity transport courses are determined on a site-specific basis by the operator as part of the permit application and approved by the Division to minimize hazards to health and safety and to ensure that damage will be minimized between the benches, outside the set course, and downslope of the lower bench should excess spoil accidentally move; all gravity-transported excess spoil, including that excess spoil immediately below the gravity transport courses and any preexisting spoil that is disturbed, is rehandled and placed in horizontal lifts in a controlled manner, concurrently compacted as necessary to ensure mass stability and to prevent mass movement, and graded to allow surface and subsurface drainage to be compatible with the natural surroundings and to ensure a minimum long-term static safety factor of 1.3. Excess spoil on the bench prior to the current mining operation that is not disturbed need not be rehandled except where necessary to ensure stability of the fill; a safety berm is constructed on the solid portion of the lower bench prior to gravity transport of the excess spoil. Where there is insufficient material on the lower bench to construct a safety berm, only that amount of excess spoil necessary for the construction of the berm may be gravity transported to the lower bench prior to construction of the berm; and, excess spoil shall not be allowed on the downslope below the upper bench except on designated gravity-transport courses properly prepared by removing topsoil. Upon completion of the fill, no excess spoil shall be allowed to remain on the designated gravity-transport course between the two benches and each transport course shall be reclaimed.

Analysis:

Disposal of Noncoal Waste

Disposal of noncoal waste will not change, because there will be no breakout in the Mill Fork Lease. Noncoal waste materials will be removed either from the Deer Creek mine portals or from Rilda Canyon portal.

Coal Mine Waste

Coal mine waste will be removed as stated in the approved Deer Creek Mine MRP.

Refuse Piles

No new refuse piles will be associated with the Mill Fork Lease.

Impounding Structures

No additional impoundment structures will be associated with the Mill Fork Lease.

Excess Spoil

Excess spoil will be made when rock slopes are developed as shown in the mine projections map. The mine map shows this material will be stored underground. (See also Vol. 2 Part 3 of the MRP.)

Findings:

The Applicant has met the minimum requirements of this section.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Minimum Regulatory Requirements:

General

All underground mining and reclamation activities shall be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and to support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of this part. The Division may require additional preventative, remedial, or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Mining and reclamation practices that minimize water pollution and changes in flow shall be used in preference to water treatment.

Groundwater Monitoring

In order to protect the hydrologic balance underground mining activities shall be conducted according to the hydrologic reclamation plan. Ground-water quality shall be protected by handling earth materials and runoff in a manner that minimizes acidic, toxic, or other harmful infiltration to ground-water systems and by managing excavations and other disturbances to prevent or control the discharge of pollutants into the ground water.

Ground-water monitoring shall be conducted according to the ground-water monitoring plan. The Division may require additional monitoring when necessary. Ground-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required.

Ground-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements including the parameters covered and the sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; or, monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of ground water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

Surface Water Monitoring

In order to protect the hydrologic balance, underground mining activities shall be conducted according to the approved plan, and the following: surface-water quality shall be protected by handling earth materials, ground-water discharges, and runoff in a manner that minimizes the formation of acidic or toxic drainage; prevents, to the extent possible using the best technology currently available, additional contribution of suspended solids to streamflow outside the permit area; and otherwise prevent water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching, or other reclamation and remedial practices are not adequate to meet water-quality standards and effluent limitations, the operator shall use and maintain the necessary water-treatment facilities or water-quality controls. Surface-water quantity and flow rates shall be protected by handling earth materials and runoff in accordance with the steps outlined in the approved plan.

Surface-water monitoring shall be conducted according to the approved surface-water monitoring plan. The Division may require additional monitoring when necessary. Surface-water monitoring data shall be submitted every 3 months to the Division or more frequently as prescribed by the Division. Monitoring reports shall include analytical results from each sample taken during the reporting period. When the analysis of any surface-water sample indicates noncompliance with the permit conditions, the operator shall promptly notify the Division and immediately provide for any accelerated or additional monitoring necessary to determine the nature and extent of noncompliance and the results of the noncompliance. Plans and hydrologic information to evaluate and mitigate the noncompliance situation and information relevant to the PHC shall be submitted to the Division as required. The reporting requirements of the water monitoring plan do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements.

Surface-water monitoring shall proceed through mining and continue during reclamation until bond release. The Division may modify the monitoring requirements, except those required by the NPDES permitting authority, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained, that: the operation has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses; and, monitoring is no longer necessary to achieve the purposes set forth in the approved monitoring plan.

Equipment, structures, and other devices used in conjunction with monitoring the quality and quantity of surface water onsite and offsite shall be properly installed, maintained, and operated and shall be removed by the operator when no longer needed.

Acid- and toxic-forming materials and underground development waste

Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water shall be avoided by: identifying and burying and/or treating, when necessary, materials which may adversely affect water quality, or be detrimental to vegetation or to public health and safety if not buried and/or treated; and, storing materials in a manner that will protect surface water and ground water by preventing erosion, the formation of polluted runoff, and the infiltration of polluted water.

Discharges into an underground mine

Discharges into an underground mine are prohibited, unless specifically approved by the Division after a demonstration that the discharge will: minimize disturbance to the hydrologic balance on the permit area, prevent material damage outside the permit area and otherwise eliminate public hazards resulting from underground mining activities; not result in a violation of applicable water quality standards or effluent limitations; be at a known rate and quality which shall meet the effluent limitations for pH and total suspended solids, except that the pH and total suspended solids limitations may be exceeded, if approved by the Division; and, meet with the approval of the Mine Safety and Health Administration.

Discharges shall be limited to the following: water; coal-processing waste; fly ash from a coal-fired facility; sludge from an acid-mine-drainage treatment facility; flue-gas desulfurization sludge; inert materials used for stabilizing underground mines; and, underground mine development wastes.

Water from one underground mine may be diverted into other underground workings according to the requirements of this section.

Gravity discharges from underground mines

Surface entries and accesses to underground workings shall be located and managed to prevent or control gravity discharge of water from the mine. The surface entries and accesses of drift mines first used after the implementation of a State, Federal, or Federal Lands Program and located in acid-producing or iron-producing coal seams shall be located in such a manner as to prevent any gravity discharge from the mine. Gravity discharges of water from an underground mine first used before the implementation of a State, Federal, or Federal Lands Program, may be allowed by the Division if it is demonstrated that the untreated or treated discharge complies with the performance standards and any additional NPDES permit requirements.

Water-quality standards and effluent limitations

Compliance with all applicable State and Federal water quality laws and regulations and with the effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434.

Diversions: General

With the approval of the Division, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria for siltation structure removal, may be diverted from disturbed areas by means of temporary or permanent diversions. All diversions shall be designed to minimize adverse impacts to the hydrologic

balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions shall not be used to divert water into underground mines without approval of the Division.

The diversion and its appurtenant structures shall be designed, located, constructed, and maintained to: be stable; provide protection against flooding and resultant damage to life and property; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and, comply with all applicable local, State, and Federal laws and regulations.

Temporary diversions shall be removed when no longer needed to achieve the purpose for which they were authorized. The land disturbed by the removal process shall be restored. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion shall be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement shall not relieve the operator from maintaining water-treatment facilities as otherwise required.

A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion shall be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat. The Division may specify additional design criteria for diversions.

Diversions: Perennial and intermittent streams

Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones that the diversions will not adversely affect the water quantity and quality and related environmental resources of the stream. The design capacity of channels for temporary and permanent stream channel diversions shall be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for perennial and intermittent streams are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion. The design and construction of all stream channel diversions of perennial land intermittent streams shall be certified by a qualified registered professional engineer as meeting the performance standards and any design criteria set by the Division.

Diversions: Miscellaneous flows

Diversion of miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the Division. Miscellaneous flows shall include ground-water discharges and ephemeral streams. The design, location, construction, maintenance, and removal of diversions of miscellaneous flows shall meet all of the general performance standards of this section. Protection against flooding and resultant damage to life and property shall be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of channel, bank and flood-plain configuration is adequate to pass safely the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion.

Stream buffer zones

No land within 100 feet of a perennial stream or an intermittent stream shall be disturbed by underground mining activities, unless the Division specifically authorizes underground mining activities closer to, or through, such a stream. The Division may authorize such activities only upon finding that: underground mining activities will not cause or contribute to the violation of applicable State or Federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream; and, if there will be a temporary or permanent steam-channel diversion, it will comply with the regulatory requirements for diversions.

The area not to be disturbed shall be designated as a buffer zone, and the operator shall mark it accordingly with buffer zone markers.

Sediment control measures

Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to: prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible.

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to: disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation; stabilizing the backfilled material to promote a reduction of the rate and volume of

runoff; retaining sediment within disturbed areas; diverting runoff away from disturbed areas; diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion; using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; treating with chemicals; and, treating mine drainage in underground sumps.

Siltation Structures: General

All surface drainage from disturbed areas shall be passed through a siltation structure before leaving the permit area. Siltation structures shall mean a sedimentation pond, a series of sedimentation ponds, or other treatment facility. Other treatment facilities means any chemical treatments, such as flocculation, or mechanical structures, such as clarifiers, that have a point-source discharge and that are utilized to prevent additional contribution of suspended solids to streamflow or runoff outside the permit area.

Disturbed area requiring treatment through a siltation structure shall not include those areas in which the only underground mining activities include: diversion ditches, siltation structures, or roads that are designed, constructed and maintained in accordance with the regulatory requirements; and, for which the upstream area is not otherwise disturbed by the operator.

Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area shall be prevented to the extent possible using the best technology currently available. Siltation structures for an area shall be constructed before beginning any underground mining activities in that area, and upon construction shall be certified by a qualified registered professional engineer, or when authorized under the regulations, by a qualified registered professional land surveyor, to be constructed as designed and as approved in the reclamation plan.

Any siltation structure which impounds water shall be designed, constructed and maintained in accordance with the requirements for impoundments.

Siltation structures shall be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated. In no case shall the structure be removed sooner than 2 years after the last augmented seeding. When the siltation structure is removed, the land on which the siltation structure was located shall be regraded and revegetated in accordance with the reclamation plan. Sedimentation ponds approved by the Division for retention as permanent impoundments may be exempted from this requirement.

Any point-source discharge of water from underground workings to surface waters which does not meet effluent limitations shall be passed through a siltation structure before leaving the permit area.

Siltation Structures: Sedimentation ponds

Sedimentation ponds, when used, shall: be used individually or in series; be located as near as possible to the disturbed area and out of perennial streams unless approved by the Division; and, be designed, constructed, and maintained to:

1.) Provide adequate sediment storage volume;
2.) Provide adequate detention time to allow the effluent from the ponds to meet State and Federal effluent limitations;
3.) Contain or treat the 10-year, 24-hour precipitation event ("design event") unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and on a demonstration by the operator that the effluent limitations will be met;
4.) Provide a nonclogging dewatering device adequate to maintain the required time;
5.) Minimize, to the extent possible, short circuiting;
6.) Provide periodic sediment removal sufficient to maintain adequate volume for the design event;
7.) Ensure against excessive settlement;
8.) Be free of sod, large roots, frozen soil, and acid- or toxic-forming coal-processing waste; and
10.) Be compacted properly.

A sedimentation pond shall include either a combination of principal and emergency spillways or a single open-channel spillway configured as specified in this section, designed and constructed to safely pass the applicable design precipitation event. The Division may approve a single open-channel spillway that is: of nonerodible construction and designed to carry sustained flows; or earth- or grass-lined and designed to carry short-term infrequent flows at non-erosive velocities where sustained flows are not expected.

The required design precipitation event for a sedimentation pond meeting the spillway requirements of this section is: for a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 100-year 6-hour event, or greater event as specified by the Division; or, for a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division.

In lieu of meeting the above spillway requirements, the Division may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified

registered professional engineer or, as applicable, a qualified registered professional land surveyor that; the sedimentation pond will safely control the design precipitation event; the water from which shall be safely removed in accordance with current, prudent, engineering practices; and, such a sedimentation pond shall be located where failure would not be expected to cause loss of life or serious property damage. If the sediment pond is located where failure would be expected to cause loss of life or serious property damage, a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event may be allowed if, in addition to the design event, is: in the case of a sedimentation pond meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of a sedimentation pond not meeting the size or other criteria of 30 CFR Sec. 77.216(a), designed to control the precipitation of a 100-year 6-hour event, or greater event as specified by the Division.

Siltation Structures: Other treatment facilities

Other treatment facilities shall be designed to treat the 10-year, 24-hour precipitation even unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations will be met. Other treatment facilities shall be designed, constructed and maintained accordance with the applicable requirements as described under sediment ponds.

Siltation Structures: Exemptions

Exemptions to the requirements of this section may be granted if: the disturbed drainage area within the total disturbed area is small; and, the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed drainage areas to meet effluent limitations and applicable State and Federal water-quality standards for the receiving waters.

Discharge structures

Discharge from sedimentation ponds, permanent and temporary impoundments, coal processing waste dams and embankments, and diversions shall be controlled, by energy dissipators, riprap channels, and other devices, where necessary, to reduce erosion, to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance. Discharge structures shall be designed according to standard engineering design procedures.

Impoundments

The following requirements apply to both temporary and permanent impoundments:

1.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) shall comply with the requirements of 30 CFR Sec. 77.216 and this section.

2.) The design of impoundments shall be certified as designed to meet the requirements of the regulations using current, prudent, engineering practices and any design criteria established by the Division. The qualified, registered, professional engineer or qualified, registered, professional, land surveyor shall be experienced in the design and construction or impoundments.

3.) An impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) or located where failure would be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.5 for a normal pool with steady state seepage saturation conditions, and a seismic safety factor of at least 1.2. Impoundments not meeting the size or other criteria of 30 CFR Sec. 77.216(a), except for a coal mine waste impounding structure, and located where failure would not be expected to cause loss of life or serious property damage shall have a minimum static safety factor of 1.3 for a normal pool with steady state seepage saturation conditions. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a), where failure would not be expected to cause loss of life or serious property damage, the Division may establish engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.

4.) Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.

5.) Foundations and abutments for an impounding structure shall be stable during all phases of construction and operation and shall be designed based on adequate and accurate information on the foundation conditions. For an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), foundation investigation, as well as any necessary laboratory testing of foundation material, shall be performed to determine the design requirements for foundation stability. All vegetative and organic materials shall be removed and foundations excavated and prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.

6.) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.

7.) Faces of embankments and surrounding areas shall be vegetated, except that faces where water is impounded may be riprapped or otherwise stabilized in accordance with accepted design practices.

8.) Spillways: An impoundment shall include either a combination of principal and emergency spillways, a single open-channel spillway, or, be configured as an impoundment that relies primarily on storage to control the

runoff from the applicable design precipitation event. The Division may approve a single open-channel spillway that is of nonerodible construction and designed to carry sustained flows; or, earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected. Except impoundments that rely primarily on storage to control the runoff, the required design precipitation events for an impoundment having spillways are: for an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a) a 100-year 6-hour event, or greater event as specified by the Division; and, for an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), a 25-year 6-hour event, or greater event as specified by the Division. In lieu of meeting the single open-channel spillway requirements, the Division may approve an impoundment that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer or qualified registered professional land surveyor that the impoundment will safely control the design precipitation event, the water from which shall be safely removed in accordance with current, prudent, engineering practices. Such an impoundment shall be located where failure would not be expected to cause loss of life or serious property damage, except where: in the case of an impoundment meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of the probable maximum precipitation of a 6-hour event, or greater event as specified by the Division; or, in the case of an impoundment not meeting the size or other criteria of 30 CFR Sec. 77.216(a), it is designed to control the precipitation of a 100-year6-hour event, or greater event as specified by the Division.

9.) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of highwall to provide adequate safety and access for the proposed water users.

10.) Inspections: Except as provided in paragraph (a)(10)(iv) of this section, a qualified registered professional engineer or other qualified professional specialist under the direction of a professional engineer, shall inspect each impoundment as provided in paragraph (a)(10)(i) of this section. The professional engineer or specialist shall be experienced in the construction of impoundments.

Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond. The qualified registered professional engineer, or qualified registered professional land surveyor as applicable, shall promptly after each inspection provide to the Division a certified report that the impoundment has been constructed and/or maintained as designed and in accordance with the approved plan and this section. The report shall include discussion of any appearance of instability, structural weakness or other hazardous condition, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation, and any other aspects of the structure affecting stability. A copy of the report shall be retained at or near the minesite.

A qualified registered professional land surveyor may inspect any temporary or permanent impoundment that does not meet the size or other criteria of 30 CFR Sec. 77.216(a) and certify and submit the report required above, except that all coal mine waste impounding structures shall be certified by a qualified registered professional engineer. The professional land surveyor shall be experienced in the construction of impoundments. Impoundments subject to 30 CFR Sec. 77.216 must be examined in accordance with 30 CFR Sec. 77.216-3. Other impoundments shall be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment shall promptly inform the Division of the finding and of the emergency procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division shall be notified immediately. The Division shall then notify the appropriate agencies that other emergency procedures are required to protect the public.

A permanent impoundment of water may be created, if authorized by the Division in the approved permit based upon the following demonstration:

1.) The size and configuration of such impoundment will be adequate for its intended purposes.
2.) The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable State and Federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not degrade the quality of receiving water below applicable State and Federal water quality standards.
3.) The water level will be sufficiently stable and be capable of supporting the intended use.
4.) Final grading will provide for adequate safety and access for proposed water users.
5.) The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or domestic uses.
6.) The impoundment will be suitable for the approved postmining land use.

The Division may authorize the construction of temporary impoundments as part of underground mining activities.

Ponds, impoundments, banks, dams, and embankments

Each application shall include a general plan for each proposed sedimentation pond, water impoundment, and coal processing waste bank, dam, or embankment within the proposed permit area. Each general plan shall:

1.) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor with assistance from experts in related fields such as landscape architecture;
2.) Contain a description, map, and cross section of the structure and its location;
3.) Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure;
4.) Contain a survey describing the potential effect on the structure from subsidence of the subsurface strata resulting from past underground mining operations if underground mining has occurred; and
5.) Contain a certification statement which includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the Division. The Division shall have approved, in writing, the detailed design plan for a structure before construction of the structure begins.

Each detailed design plan for a structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall:

1.) Be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture;
2.) Include any geotechnical investigation, design, and construction requirements for the structure;
3.) Describe the operation and maintenance requirements for each structure; and
4.) Describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for a structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall:

1.) Be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments covered by Sections 817.81-817.84 of this Chapter shall be certified by a qualified, registered, professional engineer;
2.) Include any design and construction requirements for the structure, including any required geotechnical information;
3.) Describe the operation and maintenance requirements for each structure; and
4.) Describe the timetable and plans to remove each structure, if appropriate.

Sedimentation ponds, whether temporary or permanent, shall be designed in compliance with the requirements of Siltation Structures. Any sedimentation pond or earthen structure which will remain on the proposed permit area as a permanent water impoundment shall also be designed to comply with the requirements for Impoundments. Each plan shall, at a minimum, comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2.

Permanent and temporary impoundments shall be designed to comply with the requirements for Impoundments. Each plan for an impoundment meeting the size of other criteria of the Mine Safety and Health Administration shall comply with the requirements of 30 CFR Sec. 77.216-1 and 77.216-2. The plan required to be submitted to the District Manager of MSHA under Sec. 77.216 of this title shall be submitted to the Division as part of the permit application. For an impoundment not meeting the size of other criteria of 30 CFR Sec. 77.216(a) and located where failure would not be expected to cause loss of life or serious property damage, the Division may establish through the State program approval process engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3.

Coal processing waste banks, dams and embankments shall be designed to comply with the requirements for Coal Mine Waste. Each plan shall comply with the requirements of the Mine Safety and Health Administration, 30 CFR Sections 77.216-1 and 77.216-2, and shall contain the results of a geotechnical investigation of the proposed dam or embankment foundation area, to determine the structural competence of the foundation which will support the proposed dam or embankment structure and the impounded material. The geotechnical investigation shall be planned and supervised by an engineer or engineering geologist, according to the following:

1.) The number, location, and depth of the borings and test pits shall be determined using current prudent engineering practice for the size of the dam or embankment, quantity of material to be impounded, and subsurface conditions.
2.) The character of the overburden and bedrock, the proposed abutment sites, and any adverse geotechnical conditions which may affect the particular dam, embankment, or reservoir site shall be considered.
3.) All springs, seepage, and ground-water flow observed or anticipated during wet periods in the area of the proposed dam or embankment shall be identified on each plan.
4.) Consideration shall be given to the possibility of mudflows, rock-debris falls, or other landslides into the dam, embankment, or impounded material.

If the structure is 20 feet or higher or impounds more than 20 acre-feet, each plan of this section shall include a stability analysis of each structure. The stability analysis shall include, but not be limited to, strength parameters, pore pressures, and long-term seepage conditions. The plan shall also contain a description of each engineering design assumption and calculation with a discussion of each alternative considered in selecting the specific design parameters and construction methods.

Analysis:

General

Appendix A of the Mill Fork Lease Extension to the Deer Creek Mine PAP is an update of the monitoring plan in Volume 9 of the Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg PAP. Appendix B is a report by Mayo and Associates, "Surface-water and ground-water investigation of the Mill Fork Lease area, Emery County, Utah ", for the Mill Fork Lease, which includes a PHC determination.

Appendix C to the Mill Fork Lease Extension to the Deer Creek Mine PAP has been submitted with information on springs and seeps in the Mill Fork Lease. There is an interesting section with photos and descriptions of the sites; details on location and elevation, geology and stratigraphic position, and water rights and development information; relationships to other springs; and a determination of the probable recharge area. This appendix also contains data report sheets for select seeps and springs – including isotope data for select springs, and water rights in the Mill Fork Lease area.

Ground-Water Monitoring

R645-301-700 – Hydrology - Appendix A of the Mill Fork Lease PAP lists sampling sites and a monitoring schedule.

Surface-Water Monitoring

R645-301-700 – Hydrology - Appendix A of the Mill Fork Lease PAP lists sampling sites and a monitoring schedule.

Acid- and Toxic-Forming Materials

Extensive testing of overburden strata, coal, and surrounding rocks has shown that there are no potentially acid- and toxic-forming materials (R645-301-623.100). Details of yearly analyses (1993 to 1999) of coal, floor, and roof are in R645-301-600-Geology - Appendix C of the Mill Fork Lease PAP. Analyses of overburden material are presented in Table G-1 in Volume 8 of the Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP, and summarized in Appendix A of the Mill Fork Lease PAP.

Transfer of Wells

The PAP contains no information on transfer of wells; however, there are no water-monitoring wells, piezometers, or unplugged exploration holes in the Mill Fork Lease area.

Discharges into an Underground Mine

There are no mine openings in the Mill Fork Lease area. The only potential mine opening associated with this permit extension is possible ventilation breakout in Crandall Canyon, upstream of the existing Crandall Canyon Mine. The need for these portals will be evaluated and the design will be made based on future coal exploration. If these portals are needed, they will be permitted in a separate application. All currently planned coal mine operations in the Mill Fork Lease will be underground.

Gravity Discharges

There are no mine openings in the Mill Fork Lease area. The only potential mine opening associated with this permit extension is the possible ventilation breakout in Crandall Canyon, upstream of the existing Crandall Canyon Mine. The need for these portals will be evaluated and the design will be made based on future coal exploration. If these portals are needed, they will be permitted in a separate application. All currently planned coal mine operations in the Mill Fork Lease will be underground.

Water Quality Standards and Effluent Limitations

Discharges of water from areas disturbed by coal mining and reclamation operations will be made in compliance with all Utah and federal water quality laws and regulations and with effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434 (R645-301-751, p. 7-101). UPDES information is in Appendix B of Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP Volume 9.

Diversions

No diversions are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should have no impact on existing diversions in the permit and adjacent areas.

Stream Buffer Zones

No coal mining operations are planned within 100 feet of a perennial or intermittent stream in the Mill Fork Lease. The Applicant states that no such activity will occur without approval from the Division (R645-301-731.600, p. 7-100).

Sediment Control Measures

Sediment control facilities at the Deer Creek Mine are discussed in Volume 2, Part 3 of the Deer Creek MRP. No surface facilities, sediment control, or other disturbance is planned in the Mill Fork Lease area.

Siltation Structures

No siltation structures are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should not impact existing siltation structures in the permit and adjacent areas.

Sedimentation Ponds

No sedimentation pond is planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should not impact existing sedimentation ponds in the permit and adjacent areas.

Other Treatment Facilities

No treatment facilities are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should have no impact on existing treatment structures in the permit and adjacent areas.

Exemptions for Siltation Structures

There is no request for exemption for siltation structures. No siltation structures are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should have no impact on existing siltation structures in the permit and adjacent areas.

Discharge Structures

No discharge structures are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should have no impact on existing discharge structures in the permit and adjacent areas.

Impoundments

No impoundments are planned for the Mill Fork Lease area. Coal mining operations in the Mill Fork Lease should have no impact on existing structures in the permit and adjacent areas.

Ponds, Impoundments, Banks, Dams, and Embankments

No ponds, impoundments, banks, dams, or embankments are planned for the Mill Fork Lease area. Coal mining operations in the Mill Fork Lease should have no impact on existing structures in the permit and adjacent areas.

Casing and Sealing of Wells

Each coal exploration bore hole will be plugged by filling it from total depth to the surface with type II portland cement, or if that is not feasible, with bentonite chips to within five feet of the surface with cement plug in the top of the hole. A brass marker with the hole number and year will be placed on top of the cement, two feet below surface grade. This method has been approved by the BLM and the Division and has been used in the past to prevent acid and toxic drainage from entering water resources, minimize disturbance to fish, livestock, and wildlife, machinery in the permit and adjacent area. If an exploration borehole is converted to a water monitoring well, Utah water well regulations and the provisions of R645-301-731 will be followed (R645-301-631 and -642, p. 6-23 and 6-24, 6-25 and 6-26).

Findings:

Operation plan hydrologic information in the current Deer Creek Mine MRP provides information that is adequate to meet the requirements of the Coal Mining Rules for the Mill Fork Lease.

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR 784.30, 817.180, 817.181; R645-301-526.

Minimum Regulatory Requirements:

Each applicant for an underground coal mining and reclamation permit shall submit a description, plans, and drawings for each support facility to be constructed, used, or maintained within the proposed permit area. The plans and drawings shall include a map, appropriate cross sections, design drawings, and specifications sufficient to demonstrate compliance.

Support facilities shall be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results. In addition to the other provisions of this part, support facilities shall be located, maintained, and used in a manner that: prevents or controls erosion and siltation, water pollution, and damage to public or private property; and, to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values and minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of State or Federal law.

All surface and underground mining activities shall be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines, railroads; electric and telephone lines; and water and sewage lines which pass over, under, or through the permit area, unless otherwise approved by the owner of those facilities and the Division.

Support facilities shall be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results. In addition to the other provisions of this part, support facilities shall be located, maintained, and used in a manner that prevents or controls erosion and siltation, water pollution, and damage to public or private

property. Support facilities shall, to the extent possible using the best technology currently available, minimizes damage to fish, wildlife, and related environmental values; and, minimizes additional contributions of suspended solids to streamflow or runoff outside the permit area. Any such contributions shall not be in excess of limitations of State or Federal law.

Analysis:

No support facilities and utility installations will be developed in this submittal. However, the Applicant is studying the feasibility of a new surface facility at Crandall Canyon. This would require a separate approval from the Division.

Findings:

The Applicant has met the minimum requirements of this section.

SIGNS AND MARKERS

Regulatory Reference: 30 CFR 817.11; R645-301-521.

Minimum Regulatory Requirements:

Signs and markers shall: be posted, maintained, and removed by the person who conducts the underground mining activities; be of a uniform design throughout the activities that can be easily seen and read; be made of durable material; and, conform to local laws and regulations. Signs and markers shall be maintained during all activities to which they pertain.

Mine and permit identification signs shall be displayed at each point of access from public roads to areas of surface operations and facilities on permit areas for underground mining activities. Signs will show the name, business address, and telephone number of the person who conducts underground mining activities and the identification number of the current regulatory program permit authorizing underground mining activities. Signs shall be retained and maintained until after the release of all bonds for the permit area.

Perimeter markers shall clearly mark the perimeter of all areas affected by surface operations or facilities before beginning mining activities.

Buffer zones shall be clearly marked to prevent disturbance by surface operations and facilities.

Topsoil markers shall be used where topsoil or other vegetation-supporting material is segregated and stockpiled.

Analysis:

No additional signs or markers will be needed, because all mining activity will be underground.

Findings:

The Applicant has met the minimum requirements of this section.

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Minimum Regulatory Requirements:

General Requirements

These requirements apply to surface blasting activities incident to underground coal mining, including, but not limited to, initial rounds of slopes and shafts. Each operator shall comply with all applicable State and Federal laws and regulations in the use of explosives.

All surface blasting operations incident to underground mining shall be conducted under the direction of a certified blaster. Certificates of blaster certification shall be carried by blasters or shall be on file at the permit area during blasting operations. A blaster and at least one other person shall be present at the firing of a blast. Any blaster who is responsible for conducting blasting operations at a blasting site shall be familiar with the site-specific performance standards and give direction and on-the-job training to persons who are not certified and who are assigned to the blasting crew or assist in the use of explosives.

An anticipated blast design shall be submitted if blasting operations will be conducted within 1,000 feet of any building used as a dwelling, public building, school, church or community or institutional building or 500 feet of active or abandoned underground mines. The blast design may be presented as part of a permit application or at a time, before the blast, approved by the Division. The blast design shall contain sketches of the drill patterns, delay periods, and decking and shall indicate the type and amount of explosives to be used, critical dimensions, and the location and general description of structures to be protected, as well as a discussion of design factors to be used, which protect the public and meet the applicable airblast, flyrock, and ground-vibration standards. The blast design shall be prepared and signed by a certified blaster. The Division may require changes to the design submitted.

Preblasting survey

At least 30 days before initiation of blasting, the operator shall notify, in writing, all residents or owners of dwellings or other structures located within 1/2 mile of the permit area how to request a preblasting survey. A resident or owner of a dwelling or structure within 1/2 mile of any part of the permit area may request a preblasting survey. This request shall be made, in writing, directly to the operator or to the Division, who shall promptly notify the operator. The operator shall promptly conduct a preblasting survey of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations shall be performed by the operator if requested by the resident or owner.

The operator shall determine the condition of the dwelling or structure and shall document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, and transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data. The written report of the survey shall be signed by the person who conducted the survey. Copies of the report shall be promptly provided to the Division and to the person requesting the survey. If the person requesting the survey disagrees with the contents and/or recommendations contained therein, he or she may submit to both the operator and the Division a detailed description of the specific areas of disagreement. Any surveys requested more than 10 days before the planned initiation of blasting shall be completed by the operator before the initiation of blasting.

General performance standards

The operator shall notify, in writing, residents within 1/2 mile of the blasting site and local governments of the proposed times and locations of blasting operations. Such notice of times that blasting is to be conducted may be announced weekly, but in no case less than 24 hours before blasting will occur. Unscheduled blasts may be conducted only where public or operator health and safety so require and for emergency blasting actions. When an operator conducts an unscheduled surface blast incidental to underground coal mining operations, the operator, using audible signals, shall notify residents within 1/2 mile of the blasting site and document the reason. All blasting shall be conducted between sunrise and sunset unless nighttime blasting is approved by the Division based upon a showing by the operator that the public will be protected from adverse noise and other impacts. The Division may specify more restrictive time periods for blasting.

Blasting signs, warnings, and access control

The operator shall conspicuously place signs reading "Blasting Area" along the edge of any blasting area that comes within 100 feet of any public-road right-of-way, and at the point where any other road provides access to the blasting area and at all entrances to the permit area from public roads or highways, place conspicuous signs which state "Warning! Explosives in Use,"

which clearly list and describe the meaning of the audible blast warning and all-clear signals that are in use, and which explain the marking of blasting areas and charged holes awaiting firing within the permit area.

Warning and all-clear signals of different character or pattern that are audible within a range of 1/2 mile from the point of the blast shall be given. Each person within the permit area and each person who resides or regularly works within 1/2 mile of the permit area shall be notified of the meaning of the signals in the blasting notification.

Access within the blasting areas shall be controlled to prevent presence of livestock or unauthorized persons during blasting and until an authorized representative of the operator has reasonably determined that no unusual hazards, such as imminent slides or undetonated charges, exist and access to and travel within the blasting area can be safely resumed.

Control of adverse effects

Blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the permit area.

Airblast shall not exceed the maximum limits specified in the regulations at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area. The maximum airblast and ground-vibration standards shall not apply at structures owned by the permittee and not leased to another person or at structures owned by the permittee and leased to another person, if a written waiver by the lessee is submitted to the Division before blasting.

Flyrock travelling in the air or along the ground shall not be cast from the blasting site: more than one-half the distance to the nearest dwelling or other occupied structure; beyond the area of control; or beyond the permit boundary.

In all blasting operations, except as otherwise authorized, the maximum ground vibration shall not exceed the values approved by the Division. All structures in the vicinity of the blasting area, such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines shall be protected from damage by establishment of a maximum allowable limit on the ground vibration, submitted by the operator and approved by the Division before the initiation of blasting.

The maximum allowable ground vibration shall be reduced by the Division beyond the limits otherwise provided by this section, if determined necessary to provide damage protection. The Division may require an operator to conduct seismic monitoring of any or all blasts and may specify the location at which the measurements are taken and the degree of detail necessary in the measurement.

Records of blasting operations

The operator shall retain a record of all blasts for at least 3 years. Upon request, copies of these records shall be made available to the Division and to the public for inspection.

Analysis:

General

All mining activities are underground and must comply with MSHA regulations. The Applicant has committed to comply with R645-301-524.

Findings:

The Applicant has met the minimum requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the mining activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The following shall be shown for the proposed permit area:

Affected area maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for mining design and mining operations shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Mining facilities maps

Location of each facility used in conjunction with mining operations. Such structures and facilities shall include, but not be limited to: buildings, utility corridors, roads, and facilities to be used in mining and reclamation operations or by others within the permit area; each coal storage, cleaning, and loading area; each topsoil, spoil, coal preparation waste, underground development waste, and noncoal waste storage area; each water diversion, collection, conveyance, treatment, storage and discharge facility; each source of waste and each waste disposal facility relating to coal processing or pollution control; each facility to be used to protect and enhance fish and wildlife related environmental values; each explosives storage and handling facility; location of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, and disposal areas for underground development waste and excess spoil; and, each plan or profile, at cross sections specified by the Division, of the anticipated surface configuration to be achieved for the affected areas during mining operations.

Mine workings maps

Location and extent of known workings of proposed, active, inactive, or abandoned underground mines, including mine openings to the surface within the proposed permit and adjacent areas. Location and extent of existing or previously surface-mined areas within the proposed permit area.

Monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, as required during mining operations.

Certification Requirements

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation

and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Applicable cross sections and maps included in or referenced in the Mill Fork Lease PAP have been prepared by, or under the direction of, and certified by a qualified, registered, professional engineer or land surveyor, with assistance from experts in related fields such as hydrology, geology, and biology (R645-301-513, p. 5-2).

There are no impounding structures associated with the Mill Fork Lease PAP.

Affected Area Maps

A complete affected area map was not submitted in the permit application package. The Applicant could use the existing mine map MFU-1826D and add the angel of draw. This would give the lands affected by mining of the Mill Fork Lease throughout the life of the mine.

Mining Facilities Maps

There will be no changes to the current support facilities map because all mining activities will be underground using existing facilities. All maps are P.E. certified.

The only potential surface facility associated with this permit extension is the possible ventilation breakout in Crandall Canyon, upstream of the existing Crandall Canyon Mine. The location for these portals is shown on Drawing MFU1841D in Section 500 of the Mill Fork Lease PAP. These locations are preliminary, and the need for the portals will be evaluated and the design will be made based on future coal exploration. If these portals are needed, they will be permitted in a separate application (R645-301-623.200). All currently planned coal mine operations in the Mill Fork Lease will be underground.

Mine Workings Maps

The Applicant has submitted maps showing the underground mine working associated within the Mill Fork Lease. The maps show active, inactive and abandon underground mine workings of Genwal Coal Company, Skeen Mine, Helco Mine, Beaver Creek Mine, and the Deer Creek Mine.

The Applicant has given mine projection for the Blind Canyon and Hiawatha Coal Seams in the Mill Fork Lease. Map MFU-1840D gives the mining sequence for nineteen years in the Hiawatha Seam. These map are projected and can change in the future due to ground condition, roof control, coal quality, mineable reserves, and coal market. Maps are P.E. certified.

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CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR 784.14; R645-301-730.

Minimum Regulatory Requirements:

The Division must provide an assessment of the probable cumulative hydrologic impacts (CHIA) of the proposed operation and all anticipated mining upon surface- and ground-water systems in the cumulative impact area. The CHIA shall be sufficient to determine, for purposes of permit approval, whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Division may allow the applicant to submit data and analyses relevant to the CHIA with the permit application. An application for a permit revision shall be reviewed by the Division to determine whether a new or updated CHIA shall be required.

Analysis:

This application for the Mill Fork Lease Extension is being reviewed by the Division to determine whether a new or updated CHIA shall be required. If needed, the Division will provide a revised CHIA of the proposed operation and all anticipated mining upon surface- and ground-water systems in the cumulative impact area.

Findings:

At this time, the Division does not find a need for a new or revised CHIA for the Mill Fork Lease Extension of the Deer Creek Mine PAP.

Analysis:

General

No additional bonding will be required because the Mill Fork Lease will be only underground mining. No surface disturbance has been proposed in the PAP.
Form of bond (Reclamation Agreement)

Terms and Conditions for Liability Insurance

The Deer Creek mine has liability insurance and will provide coverage for the Mill Fork Lease.

Findings:

The Applicant has met the minimum requirements of this section.

An operator shall not disturb any surface areas, succeeding increments, or extend any underground shafts, tunnels, or operations prior to acceptance by the Division of the required performance bond.

The applicant shall file, with the approval of the Division, a bond or bonds under one of the following schemes to cover the bond amounts for the permit area as determined: a performance bond or bonds for the entire permit area; a cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or, an incremental-bond schedule and the performance bond required for the first increment in the schedule.

Form of bond

The Division shall prescribe the form of the performance bond. The Division may allow for: a surety bond; a collateral bond; a self-bond; or a combination of any of these bonding methods.

Performance bond liability shall be for the duration of the surface coal mining and reclamation operation and for a period which is coincident with the operator's period of extended responsibility for successful revegetation or until achievement of the reclamation requirements of the Act, regulatory programs, and permit, whichever is later.

With the approval of the Division, a bond may be posted and approved to guarantee specific phases of reclamation within the permit area provided the sum of phase bonds posted equals or exceeds the total amount required. The scope of work to be guaranteed and the liability assumed under each phase bond shall be specified in detail.

Isolated and clearly defined portions of the permit area requiring extended liability may be separated from the original area and bonded separately with the approval of the Division. Such areas shall be limited in extent and not constitute a scattered, intermittent, or checkerboard pattern of failure. Access to the separated areas for remedial work may be included in the area under extended liability if deemed necessary by the Division.

The bond liability of the permittee shall include only those actions which he or she is obligated to take under the permit, including completion of the reclamation plan, so that the land will be capable of supporting the postmining land use approved. Implementation of an alternative postmining land use which is beyond the control of the permittee, need not be covered by the bond. Bond liability for prime farmland shall be specific to include productivity requirements.

Determination of bond amount

The amount of the bond required for each bonded area shall: be determined by the Division; depend upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.

The amount of the bond shall be sufficient to assure the completion of the reclamation plan if the work has to be performed by the Division in the event of forfeiture, and in no case shall the total bond initially posted for the entire area under 1 permit be less than $10,000.

An operator's financial responsibility for repairing material damage resulting from subsidence may be satisfied by the liability insurance policy required in this section.

Terms and conditions for liability insurance

The Division shall require the applicant to submit as part of its permit application a certificate issued by an insurance company authorized to do business in the United States certifying that the applicant has a public liability insurance policy in force for the surface coal mining and reclamation operations for which the permit is sought. Such policy shall provide for personal injury and property damage protection in an amount adequate to compensate any persons injured or property damaged as a result of the surface coal mining and reclamation operations, including the use of explosives, and who are entitled to compensation under the applicable provisions of State law. Minimum insurance coverage for bodily injury and property damage shall be $300,000 for each occurrence and $500,000 aggregate.

The policy shall be maintained in full force during the life of the permit or any renewal thereof and the liability period necessary to complete all reclamation operations under this Chapter.

The policy shall include a rider requiring that the insurer notify the Division whenever substantive changes are made in the policy including any termination or failure to renew.

The Division may accept from the applicant, in lieu of a certificate for a public liability insurance policy, satisfactory evidence from the applicant that it satisfies applicable State self-insurance requirements approved as part of the regulatory program and the requirements of this section.

Reclamation Backfilling and Grading Maps

Because no new surface disturbance will occur with the Mill Fork Lease no backfilling or grading on the Mill Fork Lease will be needed.

Reclamation Facilities Maps

No new surface facilities will be associated with the Mill Fork Lease.

Final Surface Configuration Maps

No surface structures or facilities will be developed for the Mill Fork Lease. Therefore, no new disturbed areas will be created. Because subsidence will take place, the final surface elevations will be shorter. The Division usually is not concerned with the surface configuration after subsidence has taken place.

Reclamation Monitoring and Sampling Location Maps

Elevations and locations of monitoring stations used to gather data on water quality and quantity are on Plate 1; Drawing MFS1830D – Hydrologic Map; and Drawing MFS1839D - Pre-subsidence Survey Map.

Findings:

Maps, plans, and cross sections of reclamation operations for the Mill Fork Lease are considered adequate to meet the requirements of the Coal Mining Rules.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR 800; R645-301-800, et seq.

Minimum Regulatory Requirements:

General

After a permit application has been approved, but before a permit is issued, the applicant shall file with the Division, on a form prescribed and furnished by the Division, a bond or bonds for performance made payable to the Division and conditioned upon the faithful performance of all the requirements of the Act, the regulatory program, the permit, and the reclamation plan.

The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments.

The operator shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

Reclamation monitoring and sampling location maps

Elevations and locations of test borings and core samplings. Elevations and locations of monitoring stations used to gather data on water quality and quantity, subsidence, fish and wildlife, and air quality, if required, to demonstrate reclamation success.

Reclamation surface and subsurface manmade features maps

The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current or proposed use of the buildings at the time of final reclamation. The location of surface and subsurface manmade features within, passing through, or passing over the proposed permit area, including, but not limited to, major electric transmission lines, pipelines, fences, and agricultural drainage tile fields. Each public road located in or within 100 feet of the proposed permit area and all roads within the permit area which are to be left as part of the post-mining land use. Buildings, utility corridors, and facilities to be used in conjunction with reclamation or to remain for final reclamation.

Reclamation treatments maps

The location and boundaries of any proposed areas for reclamation treatments including but not limited to: location, extent and depth of materials used for resoiling; location, extent and types of treatments for revegetation including soil preparation, soil amendments, mulching, seeding, variations in seed mixtures, and other revegetation treatments. Each water diversion, collection, conveyance, treatment, storage and discharge facility to be used during reclamation. Each facility to be used to protect and enhance fish and wildlife related environmental values. other treatments or applications which are specifically designed or required as part of phased or final reclamation activity.

Certification Requirements.

Cross sections, maps, and plans required to show the design, location, elevation, or horizontal or vertical extent of the land surface or of a structure or facility used to conduct mining and reclamation operations shall be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, a professional geologist, or in any State which authorizes land surveyors to prepare and certify such cross sections, maps, and plans, a qualified, registered, professional land surveyor, with assistance from experts in related fields such as landscape architecture.

Each detailed design plan for an impounding structure that meets or exceeds the size or other criteria of the Mine Safety and Health Administration, 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified registered professional engineer with assistance from experts in related fields such as geology, land surveying, and landscape architecture; include any geotechnical investigation, design, and construction requirements for the structure; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Each detailed design plan for an impounding structure that does not meet the size or other criteria of 30 CFR Section 77.216(a) shall: be prepared by, or under the direction of, and certified by a qualified, registered, professional engineer, or in any State which authorizes land surveyors to prepare and certify such plans, a qualified, registered, professional land surveyor, except that all coal processing waste dams and embankments shall be certified by a qualified, registered, professional engineer; include any design and construction requirements for the structure, including any required geotechnical information; describe the operation and maintenance requirements for each structure; and, describe the timetable and plans to remove each structure, if appropriate.

Analysis:

Affected Area Boundary Maps

The Division usually considers the affected area to be equivalent to the permit boundary. Several maps show the permit boundaries including Drawing MFU1840D, Deer Creek Mine Mill Fork Lease ML-48258 Hiawatha Mine Plan.

Bonded Area Map

The bonded area is usually the same as the disturbed area. Because no new surface disturbance is planned for the Mill Fork Lease area, the bonded area map will not change.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Minimum Regulatory Requirements:

Each application shall contain maps, plans, and cross sections which show the reclamation activities to be conducted, the lands to be affected throughout the operation, and any change in a facility or feature to be caused by the proposed operations, if the facility or feature was shown and described as an existing structure.

The permit application must include as part of the reclamation plan information, the following maps, plans and cross sections:

Affected area boundary maps

The boundaries of all areas proposed to be affected over the estimated total life of all mining activities and reclamation activities, with a description of size, sequence, and timing of phased reclamation activities and treatments. All maps and cross sections used for reclamation design purposes shall clearly show the affected and permit area boundaries in reference to the reclamation work being accomplished.

Bonded area map

The permittee shall identify the initial and successive areas or increments for bonding on the permit application map and shall specify the bond amount to be provided for each area or increment. The bond or bonds shall cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct surface coal mining and reclamation operations during the initial term of the permit. As surface coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee shall file with the Division an additional bond or bonds to cover such increments. Independent increments shall be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary.

Reclamation backfilling and grading maps

Contour maps and cross sections to adequately show detail and design for backfilling and grading operations during reclamation. Where possible, cross sections shall include profiles of the pre-mining, operations, and post-reclamation topography. Contour maps shall be at a suitable scale and contour interval so as to adequately detail the final surface configuration. When used in the formulation of mass balance calculations, cross sections shall be at adequate scale and intervals to support the mass balance calculations. Mass balance calculations derived from contour information must demonstrate that map scale and contour accuracy are adequate to support the methods used in such earthwork calculations. Detailed cross sections shall be provided when required to accurately depict reclamation designs which include, but are not limited to: terracing and benching, retained roads, highwall remnants, slopes requiring geotechnical analysis, and embankments of permanent impoundments.

Reclamation facilities maps

Location of each facility that will remain on the proposed permit area as a permanent feature, after the completion of underground mining activities. Location and final disposition of each sedimentation pond, permanent water impoundment, coal processing waste bank, and coal processing water dam and embankment, disposal areas for underground development waste and excess spoil, and water treatment and air pollution control facilities within the proposed permit area to be used in conjunction with phased reclamation activities or to remain as part of reclamation.

Final surface configuration maps

Sufficient slope measurements to adequately delineate the final surface configuration of the area affected by surface operations and facilities, measured and recorded according to the following: each measurement shall consist of an angle of inclination along the prevailing slope extending 100 linear feet above and below or beyond the coal outcrop or the area disturbed or, where this is impractical, at locations specified by the Division; where the area has been previously mined, the measurements shall extend at least 100 feet beyond the limits of mining disturbances, or any other distance determined by the Division to be representative of the post-reclamation configuration of the land; and, slope measurements shall take into account variations in slope, to provide accurate representation of the range of slopes and reflect geomorphic differences of the area disturbed through reclamation activities.

Exemptions for Siltation Structures

There is no request for exemption for siltation structures. No siltation structures are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should have no impact on existing siltation structures in the permit and adjacent areas.

Discharge Structures

Coal mining operations in the Mill Fork Lease should have no impact on existing discharge structures in the permit and adjacent areas.

Impoundments

No impoundments are planned for the Mill Fork Lease area. Coal mining operations in the Mill Fork Lease should have no impact on existing structures in the permit and adjacent areas.

Ponds, Impoundments, Banks, Dams, and Embankments

No ponds, impoundments, banks, dams, or embankments are planned for the Mill Fork Lease area. Coal mining operations in the Mill Fork Lease should have no impact on existing structures in the permit and adjacent areas.

Casing and Sealing of Wells

Each coal exploration bore hole will be plugged by filling it from total depth to the surface with type II portland cement, or if that is not feasible, with bentonite chips to within five feet of the surface with a cement plug in the top of the hole. A brass marker with the hole number and year will be placed on top of the cement, two feet below surface grade. This method has been approved by the BLM and the Division and has been used in the past to prevent acid and toxic drainage from entering water resources, minimize disturbance to fish, livestock, and wildlife, machinery in the permit and adjacent area. If an exploration borehole is converted to a water monitoring well, Utah water well regulations and the provisions of R645-301-731 will be followed (R645-301-631 and -642, p. 6-23 and 6-24, 6-25 and 6-26).

Findings:

Reclamation plan hydrologic information in the Mill Fork Lease Extension PAP provides information that is adequate to meet the requirements of the Coal Mining Rules.

Water Quality Standards and Effluent Limitations

Discharges of water from areas disturbed by coal mining and reclamation operations will be made in compliance with all Utah and federal water quality laws and regulations and with effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434 (R645-301-751, p. 7-101). UPDES information is in Appendix B of Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP Volume 9.

Diversions

There are no diversions in the Mill Fork Lease.

Stream Buffer Zones

No coal mining operations are planned within 100 feet of a perennial or intermittent stream in the Mill Fork Lease. The Applicant states that no such activity will occur without approval from the Division (R645-301-731.600, p. [7-]100).

Sediment Control Measures

Sediment control facilities at the Deer Creek Mine are discussed in Volume 2, Part 3 of the Deer Creek MRP. No surface facilities, sediment control, or other disturbance is planned in the Mill Fork Lease area.

Siltation Structures

No siltation structures are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should not impact existing siltation structures in the permit and adjacent areas.

Sedimentation Ponds

No sedimentation pond is planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should not impact existing sedimentation ponds in the permit and adjacent areas.

Other Treatment Facilities

No treatment facilities are planned for coal mining operations the Mill Fork Lease Coal mining operations in the Mill Fork Lease should have no impact on existing treatment structures in the permit and adjacent areas.

Ground-Water Monitoring

R645-301-700 – Hydrology - Appendix A of the Mill Fork Lease PAP lists sampling sites and a monitoring schedule.

Surface-Water Monitoring

R645-301-700 – Hydrology - Appendix A of the Mill Fork Lease PAP lists sampling sites and a monitoring schedule.

Acid- and Toxic-Forming Materials

Extensive testing of overburden strata, coal, and surrounding rocks has shown that there are no potentially acid- and toxic-forming materials (R645-301-623.100). Details of yearly analyses (1993 to 1999) of coal, floor, and roof are in R645-301-600-Geology - Appendix C of the Mill Fork Lease PAP. Analyses of overburden material are presented in Table G-1 in Volume 8 of the Deer Creek, Des-Bee-Dove, Cottonwood-Wilberg MRP, and summarized in Appendix A of the Mill Fork Lease PAP.

Transfer of Wells

The PAP contains no information on transfer of wells; however, there are no water-monitoring wells, piezometers, or unplugged exploration holes in the Mill Fork Lease area.

Discharges into an Underground Mine

There are no mine openings in the Mill Fork Lease area. The only potential mine opening associated with this permit extension is possible ventilation breakout in Crandall Canyon, upstream of the existing Crandall Canyon Mine. The need for these portals will be evaluated and the design will be made based on future coal exploration. If these portals are needed, they will be permitted in a separate application. All currently planned coal mine operations in the Mill Fork Lease will be underground.

Gravity Discharges

There are no mine openings in the Mill Fork Lease area. The only potential mine opening associated with this permit extension is the possible ventilation breakout in Crandall Canyon, upstream of the existing Crandall Canyon Mine. The need for these portals will be evaluated and the design will be made based on future coal exploration. If these portals are needed, they will be permitted in a separate application. All currently planned coal mine operations in the Mill Fork Lease will be underground.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Minimum Regulatory Requirements:

Hydrologic reclamation plan

The application shall include a plan, with maps and descriptions, indicating how the relevant regulatory requirements will be met. The plan shall be specific to the local hydrologic conditions. It shall contain the steps to be taken during mining and reclamation through bond release to minimize disturbance to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; and to meet applicable Federal and State water quality laws and regulations. The plan shall include the measures to be taken to: avoid acid or toxic drainage; prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow; provide water treatment facilities when needed; and control drainage. The plan shall specifically address any potential adverse hydrologic consequences identified in the PHC determination and shall include preventive and remedial measures.

Each application shall contain descriptions, including maps and cross sections, of stream channel diversions and other diversions to be constructed within the proposed permit area to achieve compliance with the performance standards for those structures.

Postmining rehabilitation of sedimentation ponds, diversions, impoundments, and treatment facilities

Before abandoning a permit area or seeking bond release, the operator shall ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments, and treatment facilities meet the requirements of this Chapter for permanent structures, have been maintained properly and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator shall renovate such structures if necessary to meet the requirements of this Chapter and to conform to the approved reclamation plan.

Analysis:

General

There will be no surface disturbance in the Mill Fork Lease area. There will probably be no disturbance to the hydrologic balance within the permit and adjacent areas other than water removed with the coal, water lost with mine ventilation, and water discharged under the UPDES permits: these are minimal and unavoidable effects. There is no anticipation of acid or toxic drainage. Structures in place will prevent, to the extent possible, additional contributions of suspended solids to streamflow. There is no need foreseen for additional water treatment facilities or drainage control in the Mill Fork Lease area. There have been no potential adverse hydrologic consequences identified in the PHC determination.

There are no permanent or temporary structures, stream channel diversions, and other diversions to be constructed, and there will be no need for postmining removal, reclaiming, or rehabilitation of all structures, sedimentation ponds, diversions, impoundments, and treatment facilities within the Mill Fork Lease area.

Each exploration hole, other drill hole or borehole, shaft, well, and other exposed underground opening which has been identified in the approved permit application for use to return underground development waste, coal processing waste or water to underground workings, or to be used to monitor ground water conditions, shall be temporarily sealed until actual use.

When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each shaft, drift, adit, tunnel, exploratory hole, entry way or other opening to the surface from underground shall be capped, sealed, backfilled, or otherwise properly managed, as required by the Division and consistent with the requirements of 30 CFR Section 75.1711. Permanent closure measures shall be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters.

Analysis:

The Applicant has not proposed any mine opening on the Mill Fork Lease.

Findings:

The Applicant has met the minimum requirements of this section.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Minimum Regulatory Requirements:

Reclamation

A road not to be retained under an approved postmining land use shall be reclaimed in accordance with the approved reclamation plan as soon as practicable after it is no longer needed for mining and reclamation operations. This reclamation shall include: closing the road to traffic; removing all bridges and culverts unless approved as part of the postmining land use; removing or otherwise disposing of road-surfacing materials that are incompatible with the postmining land use and revegetation requirements; reshaping cut and fill slopes as necessary to be compatible with the postmining land use and to complement the natural drainage pattern of the surrounding terrain; protecting the natural drainage patterns by installing dikes or cross drains as necessary to control surface runoff and erosion; and, scarifying or ripping the roadbed, replacing topsoil or substitute material and revegetating disturbed surfaces.

Retention

A road to be retained for an approved postmining land use shall be classified as a primary road and designed constructed and maintained in accordance with the requirements for primary roads and in consideration of the approved postmining land use.

Analysis:

Reclamation

No roads will be built in the Mill Fork Lease.

Findings:

The Applicant has met the minimum requirements of this section.

Backfilling and grading on steep slopes

Underground mining activities on steep slopes shall be conducted so as to meet other applicable regulatory requirements and the requirements of this section. The following materials shall not be placed on the downslope: spoil; waste materials of any type; debris, including that from clearing and grubbing; abandoned or disabled equipment; land above the highwall shall not be disturbed unless the Division finds that this disturbance will facilitate compliance with the environmental protection standards and the disturbance is limited to that necessary to facilitate compliance; and, woody materials shall not be buried in the backfilled area unless the Division determines that the proposed method for placing woody material within the backfill will not deteriorate the stable condition of the backfilled area.

Special provisions for steep slope mining

No permit shall be issued for any operations covered by steep slope mining, unless the Division finds, in writing, that in addition to meeting all other regulatory requirements, the operation will be conducted in accordance with the requirements for backfilling and grading on steep slopes. Any application for a permit for surface coal mining and reclamation operations covered by steep slope mining shall contain sufficient information to establish that the operations will be conducted in accordance with the requirements for backfilling and grading on steep slopes.

This section applies to any person who conducts or intends to conduct steep slope surface coal mining and reclamation operations, except: where an operator proposes to conduct surface coal mining and reclamation operations on flat or gently rolling terrain, leaving a plain or predominantly flat area, but on which an occasional steep slope is encountered as the mining operation proceeds; where a person obtains a permit under the provisions for mountaintop removal mining; or, to the extent that a person obtains a permit incorporating a variance from approximate original contour restoration requirements.

Analysis:

General

Because no surface disturbance is planned for the Mill Fork area, the Applicant does not have to address the backfilling and grading section for the Mill Fork amendment.

Findings:

The Applicant met the minimum requirements of this section.

MINE OPENINGS

Regulatory Reference: 30 CFR 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Minimum Regulatory Requirements:

Each exploration hole, other drillhole or borehole, shaft, well, or other exposed underground opening shall be cased, lined, or otherwise managed as approved by the Division to prevent acid or other toxic drainage from entering ground and surface waters, to minimize disturbance to the prevailing hydrologic balance and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit area and adjacent area. Each exploration hole, drill hole or borehole or well that is uncovered or exposed by mining activities within the permit area shall be permanently closed, unless approved for water monitoring or otherwise managed in a manner approved by the Division. Use of a drilled hole or monitoring well as a water well must meet the provisions required to protect the hydrologic balance. This section does not apply to holes drilled and used for blasting, in the area affected by surface operations.

Each mine entry which is temporarily inactive, but has a further projected useful service under the approved permit application, shall be protected by barricades or other covering devices, fenced, and posted with signs, to prevent access into the entry and to identify the hazardous nature of the opening. These devices shall be periodically inspected and maintained in good operating condition by the person who conducts the underground mining activities.

piles, and depressions; achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long term static safety factor of 1.3 and to prevent slides; minimize erosion and water pollution both on and off the site; and, support the approved postmining land use.

The postmining slope may vary from the approximate original contour when approval is obtained from the Division for a variance from approximate original contour requirements, or when incomplete elimination of highwalls in previously mined areas is allowed under the regulatory requirements. Small depressions may be constructed if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation.

If it is determined by the Division that disturbance of the existing spoil or underground development waste would increase environmental harm or adversely affect the health and safety of the public, the Division may allow the existing spoil or underground development waste pile to remain in place. Accordingly, regrading of settled and revegetated fills to achieve approximate original contour at the conclusion of underground mining activities shall not be required if: the settled and revegetated fills are composed of spoil or nonacid- or nontoxic-forming underground development waste; the spoil or underground development waste is not located so as to be detrimental to the environment, to the health and safety of the public, or to the approved postmining land use; stability of the spoil or underground development waste must be demonstrated through standard geotechnical analysis to be consistent with backfilling and grading requirements for material on the solid bench (1.3 static safety factor) or excess spoil requirements for material not placed on a solid bench (1.5 static safety factor); and, the surface of the spoil or underground development waste shall be vegetated in accordance with the revegetation standards for success, and surface runoff shall be controlled in accordance with the regulatory requirements for diversions.

Spoil shall be returned to the mined-out surface area. Spoil and waste materials shall be compacted where advisable to ensure stability or to prevent leaching of toxic materials. Spoil may be placed on the area outside the mined-out surface area in nonsteep slope areas to restore the approximate original contour by blending the spoil into the surrounding terrain if the following requirements are met: all vegetative and organic materials shall be removed from the area; the topsoil on the area shall be removed, segregated, stored, and redistributed in accordance with regulatory requirements; the spoil shall be backfilled and graded on the area in accordance with the general requirements for backfilling and grading.

Disposal of coal processing waste and underground development waste in the mined-out surface area shall be in accordance with the requirements for the disposal of spoil and waste materials except that a long-term static safety factor of 1.3 shall be achieved.

Exposed coal seams, acid- and toxic-forming materials, and combustible materials exposed, used, or produced during mining shall be adequately covered with nontoxic and noncombustible materials, or treated, to control the impact on surface and ground water, to prevent sustained combustion, and to minimize adverse effects on plant growth and the approved postmining land use.

Cut-and-fill terraces may be allowed by the Division where: needed to conserve soil moisture, ensure stability, and control erosion on final-graded slopes, if the terraces are compatible with the approved postmining land use; or, specialized grading, foundation conditions, or roads are required for the approved postmining land use, in which case the final grading may include a terrace of adequate width to ensure the safety, stability, and erosion control necessary to implement the postmining land-use plan.

Preparation of final-graded surfaces shall be conducted in a manner that minimizes erosion and provides a surface for replacement of topsoil that will minimize slippage.

Previously mined areas

Remining operations on previously mined areas that contain a preexisting highwall shall comply with all other reclamation requirements except as provided herein. The requirement that elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

1.) All spoil generated by the remining operation and any other reasonably available spoil shall be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area.
2.) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability.
3.) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The operator shall demonstrate, to the satisfaction of the Division, that the highwall remnant is stable.
4.) Spoil placed on the outslope during previous mining operations shall not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

Criteria for permits incorporating variances from approximate original contour restoration requirements.

The Division may issue a permit for nonmountaintop removal mining which includes a variance from the backfilling and grading requirements to restore the disturbed areas to their approximate original contour. The permit may contain such a variance only if the Division finds, in writing, that the applicant has demonstrated, on the basis of a complete application, that the following requirements are met:

1.) After reclamation, the lands to be affected by the variance within the permit area will be suitable for an industrial, commercial, residential, or public postmining land use (including recreational facilities).
2.) The criteria for the proposed post mining land use will be met.
3.) The watershed of lands within the proposed permit and adjacent areas will be improved by the operations when compared with the condition of the watershed before mining or with its condition if the approximate original contour were to be restored. The watershed will be deemed improved only if: the amount of total suspended solids or other pollutants discharged to ground or surface water from the permit area will be reduced, so as to improve the public or private uses or the ecology of such water, or flood hazards within the watershed containing the permit area will be reduced by reduction of the peak flow discharge from precipitation events or thaws; the total volume of flow from the proposed permit area, during every season of the year, will not vary in a way that adversely affects the ecology of any surface water or any existing or planned use of surface or ground water; and, the appropriate State environmental agency approves the plan.
4.) The owner of the surface of the lands within the permit area has knowingly requested, in writing, as part of the application, that a variance be granted. The request shall be made separately from any surface owner consent given for right-of-entry and shall show an understanding that the variance could not be granted without the surface owner's request.

If a variance is granted, the requirements of the post mining land use criteria shall be included as a specific condition of the permit, and, the permit shall be specifically marked as containing a variance from approximate original contour.

A permit incorporating a variance shall be reviewed by the Division at least every 30 months following the issuance of the permit to evaluate the progress and development of the surface coal mining and reclamation operations to establish that the operator is proceeding in accordance with the terms of the variance. If the permittee demonstrates to the Division that the operations have been, and continue to be, conducted in compliance with the terms and conditions of the permit, the review specified need not be held. The terms and conditions of a permit incorporating a variance may be modified at any time by the Division, if it determines that more stringent measures are necessary to ensure that the operations involved are conducted in compliance with the requirements of the regulatory program. The Division may grant variances only if it has promulgated specific rules to govern the granting of variances in accordance with the provisions of this section and any necessary, more stringent requirements.

Analysis:

Because no surface disturbance is planned for the Mill Fork area, the Applicant does not have to address the AOC section for the Mill Fork amendment.

Findings:

The Applicant met the minimum requirements of this section.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Minimum Regulatory Requirements:

General

Disturbed areas shall be backfilled and graded to: achieve the approximate original contour; eliminate all highwalls, spoil

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Minimum Regulatory Requirements:

Provide a plan for the reclamation of the lands within the proposed permit area, showing how the applicant will comply with the regulatory program and the environmental protection performance standards. The plan shall include, at a minimum, contain the following information for the proposed permit area: a detailed timetable for the completion of each major step in the reclamation plan; a detailed estimate of the cost of the reclamation of the proposed operations required to be covered by a performance bond, with supporting calculations for the estimates; a plan for backfilling, soil stabilization, compacting, and grading, with contour maps or cross sections that show the anticipated final surface configuration of the proposed permit area; a plan for redistribution of topsoil, subsoil, and other material along with a demonstration of the suitability of topsoil substitutes or supplements shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent coarse fragments, pH, and areal extent of the different kinds of soils; other chemical and physical analyses, field-site trials, or greenhouse tests if determined to be necessary or desirable to demonstrate the suitability of the topsoil substitutes or supplements may also be required; a plan for revegetation including, but not limited to, descriptions of the schedule of revegetation, species and amounts per acre of seeds and seedlings to be used, methods to be used in planting and seeding, mulching techniques, irrigation, if appropriate, and pest and disease control measures, if any, measures proposed to be used to determine the success of revegetation, and, a soil testing plan for evaluation of the results of topsoil handling and reclamation procedures related to revegetation; a description of the measures to be used to maximize the use and conservation of the coal resource; a description of measures to be employed to ensure that all debris, acid-forming and toxic-forming materials, and materials constituting a fire hazard are disposed of accordingly and a description of the contingency plans which have been developed to preclude sustained combustion of such materials; a description, including appropriate cross sections and maps, of the measures to be used to seal or manage mine openings, and to plug, case, or manage exploration holes, other bore holes, wells, and other openings within the proposed permit area; and, a description of steps to be taken to comply with the requirements of the Clean Air Act, the Clean Water Act, and other applicable air and water quality laws and regulations and health and safety standards.

Analysis:

There will be no reclamation needed on the Mill Fork Lease because all mining activities will be underground. Subsidence mitigation is not considered as a reclamation requirement.

Findings:

The Applicant has met the minimum requirements of this section.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Minimum Regulatory Requirements:

Note :The following requirements have been suspended insofar as they authorize any variance from approximate original contour for surface coal mining operations in any area which is not a steep slope area.

Monitoring and Sample Location Maps

Elevations and locations of monitoring stations used to gather data on water quality and quantity are on Plate 1; Drawing MFS1830D – Hydrologic Map; and Drawing MFS1839D - Pre-subsidence Survey Map.

Findings:

Maps, plans, and cross sections of operations information for the Mill Fork Lease PAP is not considered adequate to meet the requirements of this section. Prior to approval, the Applicant must provide the following in accordance with:

R645-301-521.141, The Applicant must provide a map indicating the boundaries of all areas proposed to be affected by mining.